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CallPilot

Installation and Configuration
Part 5: 702t Server Maintenance and Diagnostics

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CallPilot

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Overview

Introduction

CallPilot Part 5: 702t Server Maintenance and Diagnostics provides information and instructions for maintaining a CallPilot server, as well as troubleshooting tips for potential problems.

Who should read this guide

This guide is for planners, administrators, technicians, and engineers responsible for maintaining a CallPilot server.

It includes information for installing, repairing, replacing, and upgrading hardware and software components. The guide assumes that the reader:

- has basic computing skills
- is familiar with necessary safety procedures
- has the hardware documentation provided by the manufacturer available as a reference
- is maintaining or troubleshooting an existing CallPilot server.

Glossary and Related Guides

Part 1 of this binder contains a glossary and a list of related guides.

Skills you need

Introduction

This section describes the skills and knowledge you need to use this guide effectively.

PC experience or knowledge

Knowledge of, or experience with, the following PC products will be of assistance when administering the CallPilot server:

- Microsoft Windows 95 or Windows NT
- client/server architecture
- Internet Protocol (IP)

Other experience or knowledge

Other types of experience or knowledge that can be of use include:

- database management
- programming

Structure of this guide

Introduction

CallPilot Part 5: 702t Server Maintenance and Diagnostics defines the hardware and software diagnostic and recovery activities that a support technician should perform.

The first five chapters of this guide describe the tools that are available for identifying, diagnosing, and fixing hardware problems. If a problem is discovered, Chapter 6 provides procedures for removing the malfunctioning hardware component and upgrading or installing a new component.

If the problem is software-related, Chapters 7 and 8 describe the procedures for installing the server software in a recovery situation.

Regular server maintenance procedures are described in Chapters 9 and 10.

If required, the procedures for uninstalling and reinstalling the server software are described in Chapters 11 and 12.

The last chapter provides procedures for recovering from a hard drive failure.

Symbols and conventions

Introduction

This section describes the symbols and conventions used in this guide.

Symbols

You might encounter the following symbols in this manual.

DANGER

Risk of electric shock

Warns you of an immediate electrical hazard that, if not avoided, will result in shock, serious injury, or death.

WARNING

Risk of personal injury

Warns you of a situation in which you can be injured if instructions are not followed exactly as stated.

CAUTION

Risk of equipment damage

Alerts you to situations where data can be lost or damaged, equipment can be damaged, actions can result in service interruption, and productive time can be lost.

ATTENTION Provides information essential to the completion of a task.

Note: Describes the secondary results of procedures or commands, or special conditions under which a procedure or command must be used.

Preparing for maintenance activities

Introduction

Perform maintenance activities to ensure the proper functioning of your server or to fix any problems that occur. Before you begin any maintenance activities, collect the tools you need and follow recommended safety precautions.

This section discusses the tools and equipment required for performing maintenance procedures in the field. Recommended safety precautions for electrostatic discharge, handling cards, and handling your server are also included.

Required tools and safety precautions

Introduction

If you need to replace or upgrade any system parts, follow Nortel Networks tools and safety guidelines to prevent personal injury and damage to the server or replacement parts.

WARNING

Risk of personal injury and equipment damage
Field maintenance must always be performed by fully qualified, trained personnel.

Maintenance tools and materials checklist

Use this checklist for the tools and materials you need to perform maintenance and diagnostics tasks.

Check	Description
	Phillips cross-head screwdriver
	Standard slot-head screwdriver (1/4" and 1/2")
	Sidecutters
	Jumper removal tool or needle nose pliers
	Tape measure for determining cable lengths
	Tweezers
	Antistatic ESD wrist strap (recommended)
	Pen or pencil for writing notes, cable lengths, and cable identifications
	Flashlight for examining interior of chassis
	Cable tie wraps

Check	Description
	Pen or pencil for noting cable lengths and labeling cables
	Head-cleaning tape kit
	Cable identification labels
	Equipment log. This is used to record the model and serial number of the system, all installed options, and other information.
	Windows NT emergency disk. This contains the configuration data for Windows NT.
	Windows NT 4.0 Setup disks. The three disks are used for reinstalling the operating system.
	Microsoft DOS 6.20 disks. These three disks are used for reinstalling the operating system for maintenance and diagnostics.
	A package of blank disks.
	Intel Ethernet LAN Adapter Driver disk
	Keycode data. This governs what software features you will be installing.
	pcANYWHERE32 software. This will be used to allow remote access by Nortel Networks service. It is on the MAS 2.0 Operating System CD-ROM.
	RAID driver disk and configuration disk (optional)

Approved replacement parts

Before replacing any parts on your server, contact your Nortel Networks customer support representative for a list of approved add-in boards and peripheral devices. The use of non-approved replacement parts can cause serious system problems or void your Nortel Networks warranty.

General safety

Nortel Networks recommends that you observe these safety guidelines as you work on your server:

- Plug the computer and peripheral devices into properly grounded power sources to prevent electric shock.
- Use a surge protector or uninterruptible power supply to protect your system from sudden increases and decreases in electrical power.
- Ensure that nothing rests on your server's cables and that cables cannot be tripped over or stepped on.
- Do not handle food or liquid around the server.
- Do not push any objects into the openings of your server.

Safety precautions for working with your server

Observe these safety guidelines before removing the top cover of your server:

1. Turn off all peripheral devices connected to the server.
2. Turn off the system by using the push-button on/off power switch. Unplug the AC power cord from the system or wall outlet.
3. Label and disconnect all peripheral cables and all telecommunication lines connected to the I/O connectors or ports on the back of the system.
4. Provide electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to the chassis ground of the system when handling components. Attach your wrist strap to any unpainted metal surface.

Cooling and airflow

For proper cooling and airflow, always install the chassis top cover before turning on the system. You risk damaging system parts if you operate the system without the cover in place.

Avoiding electrostatic discharge

Introduction

Electrostatic discharge (ESD) can seriously damage component parts such as disk drives, boards, and other parts. Nortel Networks recommends that you perform the maintenance procedures described in this section at an ESD workstation.

Antistatic wrist strap

If an ESD workstation is not available, provide some ESD protection by wearing an antistatic wrist strap. Ground the ESD wrist strap by attaching it to any unpainted surface on your system chassis.

While you work

As you work inside the server, periodically touch an unpainted surface to discharge any static your body might have accumulated.

Conductive foam padded in-boards

Expansion cards are extremely sensitive to ESD. After removing a card from its protective wrapper or from the system, place it component-side up on a conductive foam pad. If possible, use antistatic floor pads and workbench pads.

Handling cards

Introduction

Electronic components are sensitive to the environment and to electrostatic discharge. To protect equipment and prolong the useful life of components, Nortel Networks recommends that you follow the precautions described below.

Avoiding electrostatic discharge

Electrostatic discharge (ESD) affects the performance and decreases the useful life of system components. Use caution when handling Error Code Correction (ECC) memory modules, SBC cards, and add-in boards to prevent damage. Wear an ESD wrist strap when handling system parts.

Precautions for handling cards

Take these precautions with any procedure that includes an add-in board:

- After removing a board from its protective wrapper or from the server, place it component-side up on a grounded, static-free surface.
- Do not slide a board over any surface.
- Do not touch board components or gold-edge connectors on the board.
- Hold a board by the top edge, or by the side edges.

Installing boards

When installing boards on the server, remember the following details:

- The backplane is flexible and supported with stand-offs.
- Board slots resist connector insertion.
- Firm, steady force seats a board in its slot properly.
- Boards seat with friction followed by a solid stop.
- External connector plates, attached to add-in boards, are seated in the rear panel and secured with a screw.

Handling hard disks

Introduction

Hard disks are extremely sensitive to vibration and physical shock. To protect equipment and prolong the life of hard drives, Nortel Networks recommends the following precautions.

Avoid vibration or physical shock

Hard disks are susceptible to even slight vibrations. A hard disk can be damaged if it is placed on a table that is accidently knocked or moved. Use caution when handling hard disks to prevent damage.

Precautions for handling hard disks

After removing a hard disk from its protective wrapper, or from the server, place it on an antistatic, padded workbench or workstation to avoid movement or jarring.

Shipping damage

If your hard disk is shipped independently for either an upgrade or a replacement, note any dents or damage on the padded container and packaging. Keep the container to prove that the part was damaged during shipping and handling.

Remove hard drives

The drives are hot-swappable and can be removed without a system shutdown.

Store hard drives

If you purchase extra hard disks, store these hard disks in the original padded container. Store the disks away from places where they might be moved or jarred.

Handling CD-ROM disks

Introduction

When removing a CD-ROM disk from its protective case or loading a disk to a drive, hold it by its center hole and outer edge. Avoid touching the disk's data surface (the non-labeled side).

To protect a disk against scratches and dirt when not in use, keep it in its protective case.

To load a CD-ROM disk

1. Press the eject button on the CD-ROM drive to eject the disk tray.
2. Place the disk on the tray with its labeled side facing up.
3. Press the eject button or gently press the front of the disk tray to retract the tray back into the drive.

To eject a CD-ROM disk

1. Press the eject button on the CD-ROM drive to eject the disk tray.
2. Remove the disk from the tray and put it in its protective case.
3. Press the eject button or gently press the front of the disk tray to retract the tray back into the drive.

Chapter 2

Starting up and shutting down the server

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Overview

Introduction

This chapter provides procedures for

- turning on the peripheral devices and the server, and verifying proper startup. See "Starting up the server" on page 29.
- shutting down the server if you need to install, reinstall, or replace hardware components. See "Shutting down the server" on page 30.

Starting up the server

To turn on the system

1. Ensure the modem power switch is on.
2. Turn the monitor power switch on.
3. Press the server power switch on.
4. Observe the Power-On Self-Test (POST) and initialization messages as the server starts.

Startup sequence

The following is the sequence for the server startup:

Stage	Description
1	POST messages appear.
2	SCSI (or RAID) initialization messages appear.
3	Allow selection of Windows NT/WINDOWS NT (VGA Mode).
5	Server boots to Windows NT and displays the logon screen.
6	Press Ctrl + Alt + Delete.
7	Log on as the administrator with the appropriate password

To interpret the POST beep codes that your CallPilot emits, refer to "POST beep codes" on page 36.

Shutting down the server

Introduction

When you need to power down the server, follow the procedure in this section.

To shutdown the server

1 Press the Ctrl, Alt, and Delete keys simultaneously.

Result: The Windows NT Security dialog box appears.

2 Select Shutdown.

Result: The Shutdown Computer dialog box appears.

3 Select Shutdown.

4 Click OK.

Result: The Shutdown Computer window displays the message, `It is now safe to turn off your computer.`

a. You might be informed that an SQLAnywhere service is running with connections, and asked if you want to end it.

b. Click Yes or End Task.

Result: You might also be asked if you want to save ACD proxy changes.

c. Click No.

Chapter 3

Diagnostics

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Overview

Introduction

This chapter includes the following information:

- Section A: "Performing startup diagnostics" on page 33 for help in interpreting the startup diagnostics on the 1001rp server
- Section B: "Performing Windows NT online diagnostics" on page 39 to help you use the run-time diagnostics provided by the Windows NT server software
- Section C: "Invoking and interpreting serial port diagnostics" on page 61 for running serial port diagnostics using the TSTERIO command

Section A: Performing startup diagnostics

In this section

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Overview

Introduction

This section contains procedures for interpreting the startup diagnostics on the 1001rp server. These diagnostics are available automatically when you restart the server. They are also available when you boot to DOS or when you first install a system.

Startup diagnostic classes

Three classes of startup diagnostics are available on the 1001rp server:

- Power-On Self-Test (POST) diagnostics
- SCSI controller diagnostics
  or
- RAID controller diagnostics

These diagnostics are available at initial system startup, or after any 1001rp server reset.

Power-On Self-Test (POST) diagnostics

Definition

The Power On Self Test (POST) is a system diagnostic program (stored in the BIOS) that runs every time the 1001rp server is started. POST's function is to test system components, then display status messages.

POST message formats

POST reports on the system status using POST beep codes.

Interpreting POST diagnostics

Introduction

This section explains POST diagnostic codes.

POST beep codes

If an error occurs before video initialization, POST emits beep codes that indicate errors in hardware, software, or firmware.

A beep code is a series of separate tones, each equal in length. Write down the beep codes before calling your Nortel Networks customer support representative.

ATTENTION

Some POST beep codes are critical and require that you replace your motherboard. See the following table for more information about beep codes.

Number of beeps	Error message and conditions
1	Refresh failure
2	Parity cannot be reset
3	First 4 kbytes memory failure
4	Timer not operational
5	Processor failure
6	Keyboard controller gate A20 is off (v_mode)
7	Exception interrupt error
8	Display memory read/write error

Number of beeps	Error message and conditions
9	ROM checksum error
10	Shutdown register read/write error

Interpreting startup diagnostics from SCSI BIOS

Introduction

The results from the SCSI controller diagnostics appear after the POST results.

Applicable cards

Results of the startup diagnostics appear only if you have the following adapter card installed on your system:

- Symbios Logic SCSI controller

  This controller is integrated into the system and, therefore, is always present.

Section B: Performing Windows NT online diagnostics

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Overview

Introduction

This section outlines how to access the run-time online diagnostics provided by the Windows NT server software.

Checking hardware using Windows NT 4.0 diagnostics

Introduction

The Windows NT 4.0 system provides tools that can be used to diagnose and debug system problems, including

- Windows NT Diagnostics screen
- Event Viewer

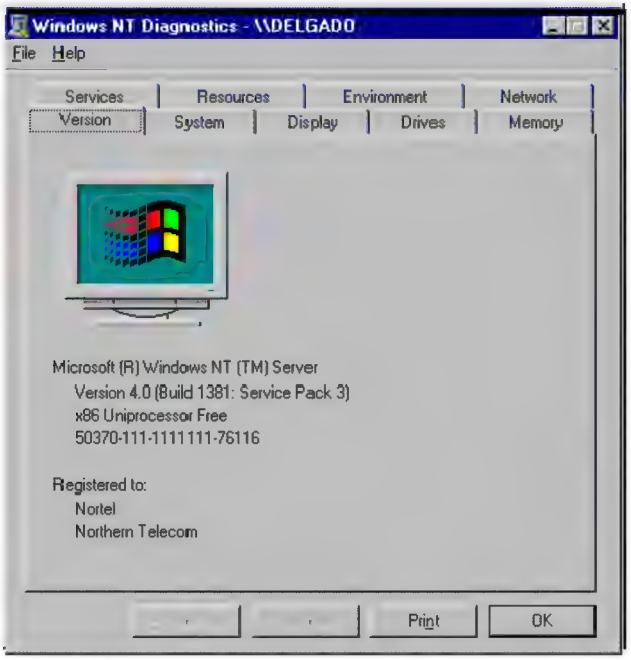
Windows NT Diagnostics window

The Windows NT 4.0 Diagnostics window allows you to view details concerning the system and network components.

You can open the following tabs on the Diagnostics window to display specific information:

- Version
- System
- Display
- Drives
- Memory
- Services
- Resources
- Environment
- Network

Windows NT Diagnostics main window



To access Windows NT 4.0 diagnostic tools

1. Log on to Windows.
2. Select Start > Programs > Administrative Tools (Common) > Windows NT Diagnostics to access the Windows NT Diagnostics window.
3. Select the appropriate tab on the Diagnostics main window to view information concerning the system and network. Details available on each tab are supplied in the following table:

Select	To display details about
Version	Version Registration
System	System identifier HAL BIOS information Processors
Display	BIOS information Adapter Driver
Drives	Drives by type or letter To view specific details, select a drive, and then press Properties to view details for the drive, including size, labels, and so on.
Memory	Memory, including totals, physical and kernel memory, commit charge, kernel
Services	Service and state for both services and devices To view specific details, select a service, and then press Properties to view details, including pathname, dependencies, service flags, and so on.
Resources	Select one of the following buttons to display information about the resources available on the system: IRQ I/O Port DMA Memory Devices To view specific details, select a resource, and then press Properties.

Select	To display details about
Environment	Variable and value for both system and local user
Network	Select one of the following buttons to display information about the network and components: General Transports Settings Statistics

Event Viewer

Windows NT 4.0 provides an Event Viewer that is used to view event logs to assist in diagnosing and debugging system problems.

Three types of event logs are available from the Event Viewer, as follows:

System	Logs events by Windows NT 4.0 components, including RAS or other WinNT services.
Security	Logs security events, such as logons, logoffs, illegal access, and so on. This option is available only to users with Administrative access.
Applications	Logs events by application, such as database file errors, and so on.

To access the Event Viewer

1 Log on to Windows.

2 Select Start > Programs > Administrative Tools (Common) > Event Viewer.

3 Select the appropriate tab to view the associated event logs.

Invoking the chkdsk utility

Introduction

The chkdsk utility checks a specified disk on the server and displays a status report. Use this utility on drive C or D.

Note: A version of this utility, called autocheck, automatically runs at Windows NT boot-time. Output from this utility appears on the start-up blue screen.

Chkdsk utility syntax

The chkdsk utility uses the following syntax:

```
chkdsk [drive:][path]filename] [/F] [/V] [/R]
```

Parameters	Description
[drive:]	The drive letter of the drive you want to check.
filename	The names of files to check for fragmentation.
/F	Add this switch to fix errors on the disk.
/V	Add this switch to display the full pathname of every file on the disk.
/R	Add this switch to locate bad sectors and to recover readable information.

To run the chkdsk utility from Windows NT 4.0

1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

Result: The MS-DOS Command Prompt window appears.

2 At the MS-DOS prompt, type **chkdsk <drive letter:>** (for example, chkdsk c:).

3 Press Enter.

Result: The system runs the chkdsk utility.

4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

Invoking and interpreting TCP/IP diagnostics

Introduction

This section outlines the following TCP/IP diagnostic tools available for the Ethernet card. The first three tools are the most useful:

- ipconfig
- ping
- tracert
- arp
- nbtstat
- netstat

The ipconfig command

The ipconfig command displays IP configuration information.

Ipconfig default

Running the command without flags displays the IP address, subnet mask, and default gateway for each adapter bound to TCP/IP.

Ipconfig command syntax

ipconfig /[ ]

The following flags are available for the ipconfig command:

Flag	Description
/?	Displays Help information.
/all	Displays full configuration information.
/release	Releases the IP address for the specified adapter.

Flag	Description
/renew	Renews the IP address for the specified adapter.

To run the ipconfig command from Windows NT 4.0

1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

Result: The MS-DOS Command Prompt window appears.

2 At the MS-DOS prompt, type **ipconfig <with appropriate parameters:>** (for example, ipconfig /all).

3 Press Enter.

Result: The system runs the ipconfig utility.

4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

The ping command

The ping command sends an echo request to a specified host.

Ping command syntax

The ping command uses the following syntax:

ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS]

[-r count] [-s count] [[-j host-list] | [-k host-list]]

[-w timeout] destination-list

Parameters	Description
-t	Pings the specified host until interrupted.
-a	Resolves addresses to host names.
-n count	Specifies the number of echo requests to send.
-l size	Sends buffer size.
-f	Set Don't Fragment flag in packet.
-i TTL	Time To Live.
-v TOS	Type Of Service.
-r count	Record route for count hops.
-s count	Time stamp for count hops.
-j host-list	Loose source route along host list.
-k host-list	Strict source route along host list.
-w timeout	Timeout in milliseconds to wait for each reply.

To run the ping command from Windows NT 4.0

1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

Result: The MS-DOS Command Prompt window appears.

2 At the MS-DOS prompt, type **ping <destination IP address:>** (for example, ping 47.286.32.0:).

3 Press Enter.

Result: The system indicates a successful ping.

4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

The tracert command

This utility determines the route taken to a destination.

How tracert works

The tracert utility follows several steps to complete its task:

- Tracert sends Internet Control Message Protocol (ICMP) echo packets with varying Time-To-Live (TTL) values to the destination.
- Each router along the path must decrement the TTL on a packet by at least 1 before forwarding it, so the TTL is effectively a hop count.
- When the TTL on a packet reaches 0, the router sends back an ICMP Time Exceeded message to the source system.
- Tracert determines the route by sending the first echo packet with a TTL of 1 and incrementing the TTL by 1 on each subsequent transmission until the target responds, or the maximum TTL is reached.
- Tracert then examines the ICMP Time Exceeded messages sent back by intermediate routers.

Tracert syntax

tracert [-d] [-h maximum_hops] [-j host_list] [-w timeout] [target_name]

Tracert parameters

The tracert command uses the following parameters:

Parameter	Description
-d	Specifies not to resolve addresses to hostnames.
-h maximum_hops	Specifies the maximum number of hops to search for target.
-j host-list	Specifies a loose source route along the host list.
-w timeout	Waits the number of milliseconds specified by the timeout for each reply.

Parameter	Description
target_name	The name of the target host.

To run the tracert command from Windows NT 4.0

1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

Result: The MS-DOS Command Prompt window appears.

2 At the MS-DOS prompt, type

tracert [-d] [-h maximum_hops] [j host_list] [-w timeout] [target name]

(for example, tracert 47.286.0.32 210 47.236.0.04)

3 Press Enter.

Result: The system runs the tracert utility.

4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

The arp command

The arp command displays and modifies the IP-to-physical address translation tables used by Address Resolution Protocol (arp).

Arp command syntax

The arp command uses the following syntax:

arp -s inet_addr eth_addr [if_addr]

arp -d inet_addr [if_addr]

arp -a [inet_addr] [-N if_addr]

Parameter	Description
-a	Displays current arp entries by interrogating the current protocol data. If inet_addr is specified, the IP and physical addresses for only the specified computer appear. If more than one network interface uses arp, entries for each arp table appear.
-g	Same as -a.
inet_addr	Specifies an Internet address.
if_addr	Specifies the Internet address of the interface whose address translation table should be modified. If not present, the first applicable interface is used.
eth_addr	Specifies a physical address.
-N if_addr	Displays the arp entries for the network interface specified by if_addr.
-d	Deletes the host specified by inet_addr.

-s	Adds the host and associates the Internet address inet_addr with the Physical address eth_addr. The physical address is given as six hexadecimal bytes separated by hyphens. The entry is permanent.

To run the arp command from Windows NT 4.0

1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

Result: The MS-DOS Command Prompt window appears.

2 At the MS-DOS prompt, type **arp** with the required parameters (for example, arp -g 47.286.0.32).

3 Press Enter.

Result: The system runs the arp command.

4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

The nbtstat command

The nbtstat command displays protocol statistics and current TCP/IP connections using NBT. This command is available only if the TCP/IP protocol is installed.

Nbtstat command syntax

The nbtstat command uses the following syntax:

nbtstat [-a remotename] [-A IP address] [-c] [-n] [-R] [-S] [-s] [interval]

Parameter	Description
-a remotename	Lists the remote computer's name table using its name.
-A IP address	Lists the remote computer's name table using its IP address.
-c	Lists the contents of the NetBIOS name cache giving the IP address of each name.
-n	Lists local NetBIOS names. Registered indicates that the name is registered by broadcast (Bnode) or WINS (other node types).
-R	Reloads the LMHOSTS file after purging all names from the NetBIOS name cache.
-r	Lists name resolution statistics for Windows networking name resolution. On a Windows NT computer configured to use WINS, this option returns the number of names resolved and registered through broadcast or through WINS.
-S	Displays both client and server sessions, listing the remote hosts by IP address only.

-s	Displays both client and server sessions, and attempts to convert the remote host IP address to a name using the HOSTS file.
interval	Displays selected statistics, pausing interval seconds between each display. Press CTRL+C to stop displaying statistics. Without this parameter, nbtstat prints the current configuration information once.

To run the nbtstat command from Windows NT 4.0

1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

Result: The MS-DOS Command Prompt window appears.

2 At the MS-DOS prompt, type **nbtstat** with the required parameters.

3 Press Enter.

Result: The system runs the nbtstat utility.

4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

The netstat command

The netstat command displays current TCP/IP network connections and protocol statistics.

Netstat command syntax

The netstat command uses the following syntax:

netstat [-a] [-e] [-n] [-s] [-p proto] [-r] [interval]

Parameter	Description
-a	Displays all connections and listening ports.
-e	Displays Ethernet statistics. This can be combined with the -s option.
-n	Displays addresses and port numbers in numerical form.
-s	Displays per-protocol statistics.
-p proto	Shows connections for the protocol specified by proto. Proto can be tcp or udp. If used with the -s option, proto can be tcp, udp, or ip.
-r	Displays the contents of the routing table.
interval	Redisplays selected statistics, pausing between each display. Press CTRL+C to stop redisplaying.

To run the netstat command from Windows NT 4.0

1. Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

   Result: The MS-DOS Command Prompt window appears.

2. At the MS-DOS prompt, type **netstat** with the required parameters.
3. Press Enter.

   Result: The system runs the netstat utility.

4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

Invoking and interpreting Token Ring card diagnostics

Introduction

If TCP/IP protocol is installed, you can diagnose faults on the Token Ring card by using the ping command under Windows NT.

Using the ping command

Instructions for using the ping command are in the procedure "To run the ping command from Windows NT 4.0" on page 50.

Section C: Invoking and interpreting serial port diagnostics

In this section

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Shutting down services 63

Conducting TSTSERIO tests 65

Conducting TSTSERIO tests with the loopback plug 69

Restarting services 70

Overview

Introduction

Run serial port diagnostics on the 1001rp server using the TSTSERIO command. Direct the TSTSERIO command to serial ports on the server after services on these ports have been shut down manually.

Shutting down services

Introduction

This section details how to shut down a service using a specific serial port. Use the procedures below before invoking the TSTSERIO local loopback tests.

CAUTION

Risk of communications loss

By stopping the services on COM 1 or COM 2, you lose the support access feature.

CAUTION

Risk of stopping call processing

By stopping the services on COM 2, you stop call processing on CallPilot.

Services to stop for COM 1 testing

- Remote Access Server

Services to stop for COM 2 testing

- CallPilot SLEE
- MAS EMCI
- MAS Notification Service
- Remote Access Server

Net Stop command

Use the Net Stop command to stop a specified service on a serial port.

NET STOP command syntax

The Net Stop command uses the following syntax:

net stop "[service-name]"

ATTENTION

You must restart the services that you shut down through the Net Start command after running the diagnostic. For details, see "Restarting services" on page 70.

To invoke the Net Stop command from Windows NT 4.0

1. Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

   Result: The MS-DOS Command Prompt window appears.

2. At the MS-DOS prompt, type net stop "[service name]". For example, type net stop "Remote Access Server."

3. Press Enter.

   Result: The system runs the net stop command utility.

4. Type Exit to exit MS-DOS and return to Windows NT 4.0.

Conducting TSTSERIO tests

Introduction

The TSTSERIO command performs local loopback tests of the serial communications ports from the 1001rp server run-time environment.

Note: Before conducting these tests, shut down services using the NET STOP command detailed on page 63.

CAUTION

Risk of communications loss

By stopping the services on COM 1 or COM 2, you lose the support access feature.

CAUTION

Risk of stopping call processing

By stopping the services on COM 2, you stop call processing on CallPilot.

TSTSERIO command syntax

The syntax for the TSTSERIO command is as follows:

TSTSERIO [/?] /P:comport [/S:subtstname [/L:loops]

Flag	Requirement	Description
[?]	n/a	Displays Help.
/P:comport	Required	Specifies the symbolic port name assigned to the port you want to test.

Flag	Requirement	Description
[/S:subtstname]	Optional	Specifies a TSTSERIO subtest. See the table below for a description of the available subtests.
[/L:loops]	Optional	Specifies the number of times (up to a maximum of 65 535) to execute the requested test. The default number of tests is 1. A value of 0 infinitely loops until you enter CTRL+C.

TSTSERIO internal loopback diagnostic subtests

The following internal loopback subtests are available for the TSTSERIO command. For each of these tests, the communications resource must be available:

Subtest name	Description
idata	Internal data bus loopback
imsr	Internal modem status register
baud	Internal data bus loopback at various baud rates
word	Test 5-, 6-, 7-, and 8-bit data lengths
stop	Test 1, 1.5, and 2 stop bits
pari	Test odd/even parity
fifo	Test that device can operate in fifo mode

To invoke the TSTSERIO /P command from Windows NT 4.0

1. Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

   Result: The MS-DOS Command Prompt window appears.

2. At the MS-DOS prompt, type **tstserio** with the required parameters. For example, type **TSTSERIO /P com1** or **TSTSERIO /P com 2**.

3. Press Enter.

4. Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

TSTSERIO external loopback plug subtests

The following external loopback subtests are available for the TSTSERIO command. For each of these tests, an external loopback connector must be used. For more information, "Conducting TSTSERIO tests with the loopback plug" on page 69.

Subtest name	Description
edata	External data bus loopback. This test requires an external loopback connector.
emsr	External modem status register. This test requires an external loopback connector.
eint	Test ability of device to generate interrupts. This test requires an external loopback connector.

To invoke the TSTSERIO /S command from Windows NT 4.0

1. Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

   Result: The MS-DOS Command Prompt window appears.

2. At the MS-DOS prompt, type **tstserio** with the required parameters. For example, type **TSTSERIO /P com1 /S extr**.

3. Press Enter.

4. Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

Conducting TSTSERIO tests with the loopback plug

Introduction

The TSTSERIO command requires an external loopback connector plug for its edata, emsr, and eint subtests.

9-pin connector plug

The standard serial loopback connector is a female 9-pin D-sub connector. This connector has the following pins wired together:

- CTS (pin 8) wired to (pin 7) RTS
- SIN (pin 2) wired to (pin 3) SOUT
- DTR (pin 4) wired to (pin 6) DSR

Once the plug is installed on the serial port, TSTSERIO can be invoked according to the procedure outlined in the previous section.

Restarting services

Introduction

This section details how to restart the services for COM 1 or COM 2 after invoking the TSTSERIO local loopback tests.

Services to restart after COM 1 testing

- Remote Access Server

Services to restart after COM 2 testing

- CallPilot SLEE
- MAS EMCI
- MAS Notification Service
- Remote Access Server

Net Start command

Use the NET START command to restart a specified service on a serial port.

NET START command syntax

The NET START command uses this syntax; net start "[service-name]"

To invoke the Net Start command from Windows NT 4.0

1 Select Start > Programs > Command Prompt to display the MS-DOS command prompt window.

Result: The MS-DOS Command Prompt window appears.

2 At the MS-DOS prompt, type net start "[service name]". For example, type net start "Remote Access Server".

3 Press Enter.

4 Type **Exit** to exit MS-DOS and return to Windows NT 4.0.

Chapter 4

Using the Administrative PC to diagnose the server

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Overview

Introduction

This chapter provides information on how to detect, isolate, and fix hardware problems on the CallPilot server using the CallPilot Administration Client software on the administrative PC.

- The section "Detecting, isolating, and fixing hardware problems" on page 73 provides details on how to detect, isolate, and fix hardware problems.
- The section "Working with the Maintenance window" on page 83 describes how to use the Maintenance window as you detect, isolate, and fix hardware problems.

Note: The components in the Maintenance window vary based on the type of switch connected to CallPilot and the server type. The dialog box examples in this chapter are for illustration purposes and might not appear exactly the same on your system. References to the SCbus, Master Timeswitch, and MPB are not applicable to the 200i server.

Section A: Detecting, isolating, and fixing hardware problems

In this section

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Viewing events and isolating problems 76

Checking channel status 79

Overview

Introduction

This section provides guidelines on how to detect, isolate, and fix potential or real hardware problems.

- "Detecting hardware problems" on page 75 provides information on the different ways in which you typically become aware of hardware problems.
- "Viewing events and isolating problems" on page 76 describes how to work with the Alarm Monitor, Event Browser and Maintenance screen. These tools are used to isolate the cause of problems and plan a strategy to fix hardware problems.
- "Checking channel status" on page 79 describes how to view channel status in the Channel Monitor and Multimedia Monitor.

Component dependencies

The status of some components depend on the operational status of other components. If a component fails or is stopped, the dependent components go out of service.

Note: Based on the type of switch connected to CallPilot and the server type, some of these components might not appear on your system.

Component	Dependent components
SCbus	all MPBs, MPCs, and all Multimedia and Call channels
Master Timeswitch	all MPBs, MPCs, and all Multimedia and Call channels
Timeswitch	all Multimedia and Call channels connected to the same MPB as the timeswitch
MPC	all multimedia channels on the MPC-8 card
DS30x	all Call channels associated with that DS30x link cable

Detecting hardware problems

Introduction

Typically, you first become aware of a hardware problem when an alarm is raised. All hardware faults produce an alarm (or series of alarms, depending on the problem) in the Alarm Monitor.

Note: By default, the Alarm Monitor appears on the screen as soon as an alarm is raised. It does not appear if Alerting Off has been set in the CallPilot system window. For more information on setting or resetting the alerting feature, refer to the *Monitoring and Security for the Administrator* guide.

Other indications of a hardware problem

Other indications of a hardware problem include the following:

- user complaints
- call processing difficulties, such as busy signals, static, dropped calls, trouble connecting, and cross talk (hearing other conversations)
- system administrator log on difficulties
- alert icons on the Maintenance window

Viewing events and isolating problems

Introduction

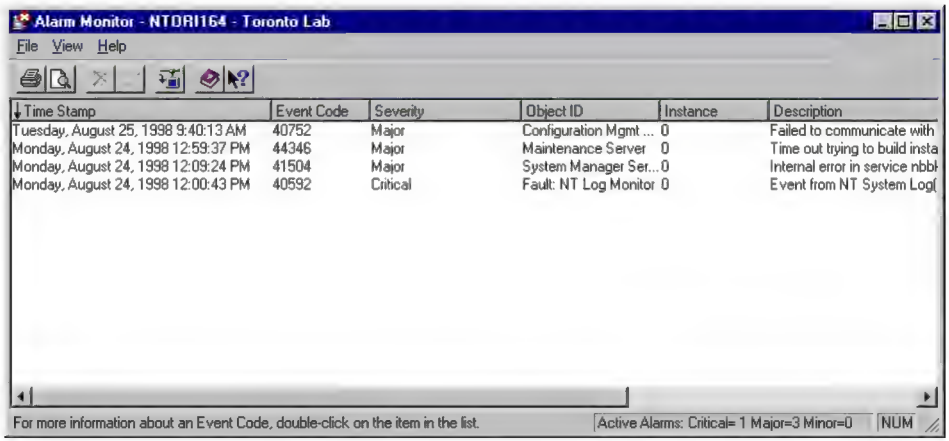
Use one of the following methods to isolate and plan a strategy to fix a hardware problem:

- Go to the Alarm Monitor to investigate one or more raised alarms.
- Use the Event Browser to investigate a series of events that occurred around the time an alarm was raised.
- Go to the Maintenance window to get status information for any suspect components. For some components, you can use the Diagnostic tab of the Maintenance window to run a diagnostic test.

Note: For detailed information on how to use the Alarm Monitor and Event Browser (for example, how to set preferences), refer to the *Monitoring and Security for the Administrator* guide.

Using the Alarm Monitor

Each alarm in the Alarm Monitor has Help text that often provides a solution to the problem. If the solution is not apparent, use the Event Browser or the Maintenance screen to further investigate the problem.


Alarm Monitor - NTORI164 - Toronto Lab
File View Help
Time Stamp | Event Code | Severity | Object ID | Instance | Description
Tuesday, August 25, 1998 9:40:13 AM | 40752 | Major | Configuration Mgmt ... | 0 | Failed to communicate with
Monday, August 24, 1998 12:59:37 PM | 44346 | Major | Maintenance Server | 0 | Time out trying to build insta
Monday, August 24, 1998 12:09:24 PM | 41504 | Major | System Manager Ser... | 0 | Internal error in service nbbl
Monday, August 24, 1998 12:00:43 PM | 40592 | Critical | Fault: NT Log Monitor | 0 | Event from NT System Log(
For more information about an Event Code, double-click on the item in the list.
Active Alarms: Critical= 1 Major=3 Minor=0
NUM

To investigate using the Alarm Monitor

1 If the Alarm Monitor is not already visible, then in the CallPilot system window, go to System Administration > Alarms and Events > Alarm Monitor.

2 Double-click the first critical or major alarm.

Result: The Help window appears.

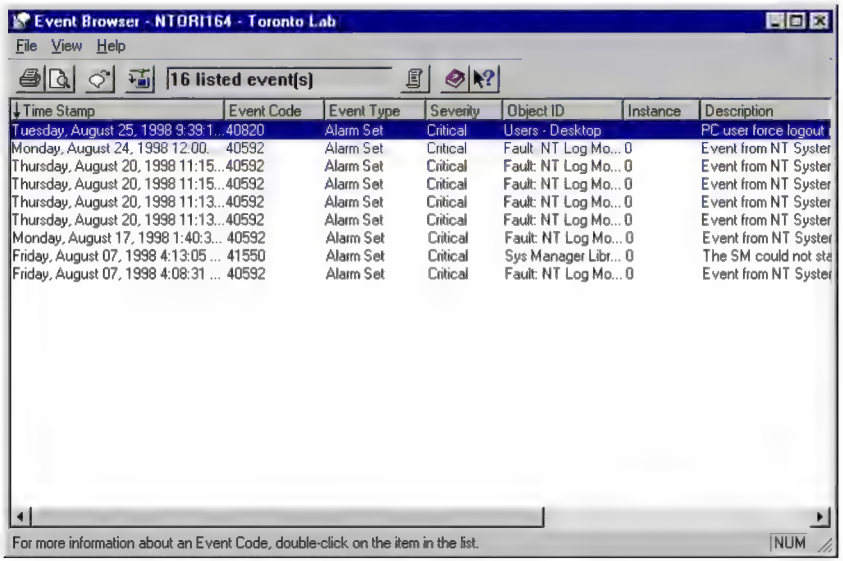
3 View the description and recovery action.

4 Repeat steps 2 and 3 for a few more alarms.

5 If the solution to the problem is not apparent, obtain the return code of the first event and continue the investigation by using the Event Browser (go to "Using the Event Browser" on page 77).

Using the Event Browser

The Event Browser lets you view events that have been recorded in the server log. The event listing can help you better determine the root cause of the problem. Use the Event Browser to view the time the event occurred, the object that generated the event, and the cause of the event.


Event Browser - NTORI164 - Toronto Lab
File View Help
16 listed event(s)
Time Stamp | Event Code | Event Type | Severity | Object ID | Instance | Description
Tuesday, August 25, 1998 9:39:1... 40820 Alarm Set Critical Users - Desktop PC user force logout
Monday, August 24, 1998 12:00... 40592 Alarm Set Critical Fault: NT Log Mo... 0 Event from NT Syster
Thursday, August 20, 1998 11:15... 40592 Alarm Set Critical Fault: NT Log Mo... 0 Event from NT Syster
Thursday, August 20, 1998 11:15... 40592 Alarm Set Critical Fault: NT Log Mo... 0 Event from NT Syster
Thursday, August 20, 1998 11:13... 40592 Alarm Set Critical Fault: NT Log Mo... 0 Event from NT Syster
Thursday, August 20, 1998 11:13... 40592 Alarm Set Critical Fault: NT Log Mo... 0 Event from NT Syster
Monday, August 17, 1998 1:40:3... 40592 Alarm Set Critical Fault: NT Log Mo... 0 Event from NT Syster
Friday, August 07, 1998 4:13:05 ... 41550 Alarm Set Critical Sys Manager Libr... 0 The SM could not sta
Friday, August 07, 1998 4:08:31 ... 40592 Alarm Set Critical Fault: NT Log Mo... 0 Event from NT Syster
For more information about an Event Code, double-click on the item in the list.
NUM

To investigate using the Event Browser

1. In the CallPilot system window, go to System Administration > Alarms and Events > Event Browser.
2. Double-click an event that appears to be related to the problem, or an event that occurred near the time the alarm was raised.
3. View the description and recovery action.
4. Repeat steps 2 and 3 for a few more events.
5. If the solution to the problem is not apparent, contact your distributor.

Using the Maintenance window

If you suspect or discover a problem with an MPC-8 card or the timeswitch, use the Diagnostic tab of the Maintenance window. You can view the results of the last diagnostic test run against the component. This produces a list of components that might be causing the problem. A probability percentage is listed with each component that reflects how probable it is that replacing the component will fix the problem.

For information on using the Maintenance window to view the results of the last diagnostic test, see "Viewing last diagnostic results" on page 105.

For information on all aspects of the Maintenance window, see Section B: "Working with the Maintenance window," on page 83.

Checking channel status

Introduction

The Channel Monitor shows the status of call channels (the connection between the server and the switch that carries the call signal to CallPilot).

The Multimedia Monitor shows the status of multimedia channels (the DSP ports that process the call— these are the voice, fax, and speech recognition channels).

The Channel Monitor and Multimedia Monitor also enable you to start, stop, or courtesy stop channels. To run diagnostics on a channel, use the Maintenance window.

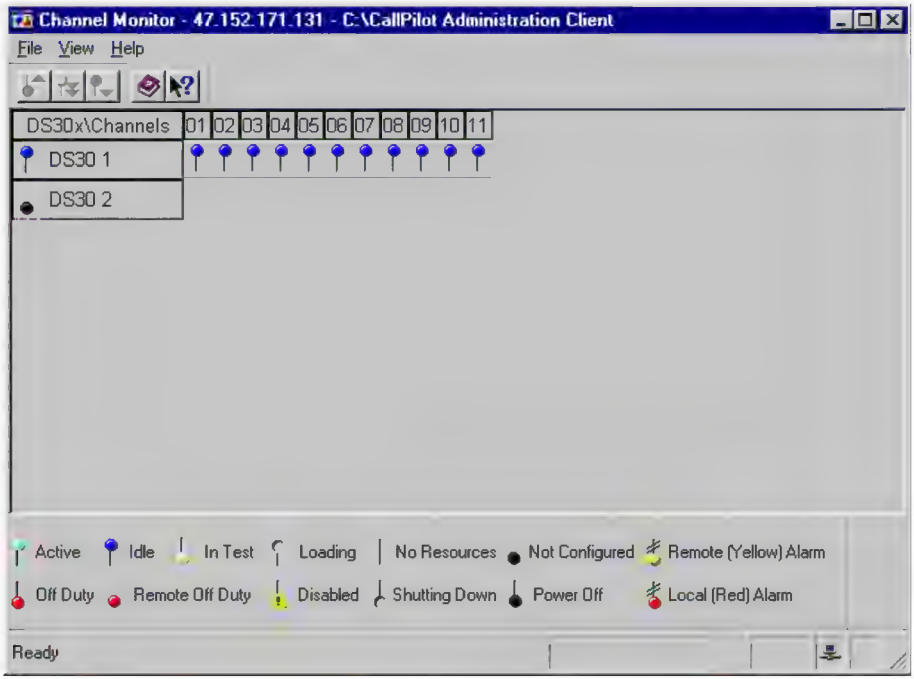
Note: For detailed information on how to use the Channel Monitor and Multimedia Monitor, refer to the online Help in the CallPilot system window, or refer to the *Monitoring and Security for the Administrator* guide.

To view call channel states

1 In the CallPilot system window, go to System Administration > Maintenance Administration > Channel Monitor.

2 Double-click Channel Monitor.

Result: The Channel Monitor window appears, showing the state of all call channels on the system. For an explanation of the channel states, refer to the online Help.

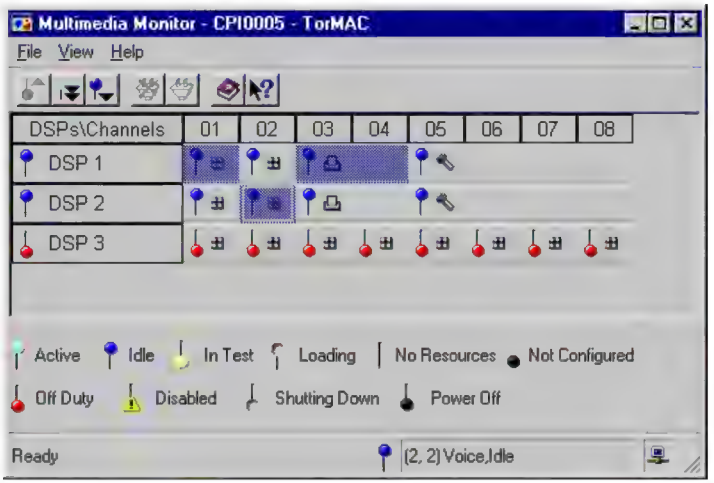


To view multimedia channels

1 In the CallPilot system window, go to System Administration > Maintenance Administration > Multimedia Monitor.

2 Double-click Multimedia Monitor.

Result: The Multimedia Monitor window appears, showing the state of all multimedia channels. For an explanation of the channel states, refer to the online Help.



Section B: Working with the Maintenance window

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Overview

Introduction

Use the Maintenance window to do the following:

- Obtain general information about components.
- View component states.
- Start and stop components.
- Run integrated diagnostic tests.
- View the results of the last diagnostic test run against a component.

Introducing the Maintenance window

Introduction

All physical and logical hardware components are listed in the Maintenance window tree. This tree shows how components relate to each other. For example, eight multimedia channels exist as subcomponents for each MPC-8 card.

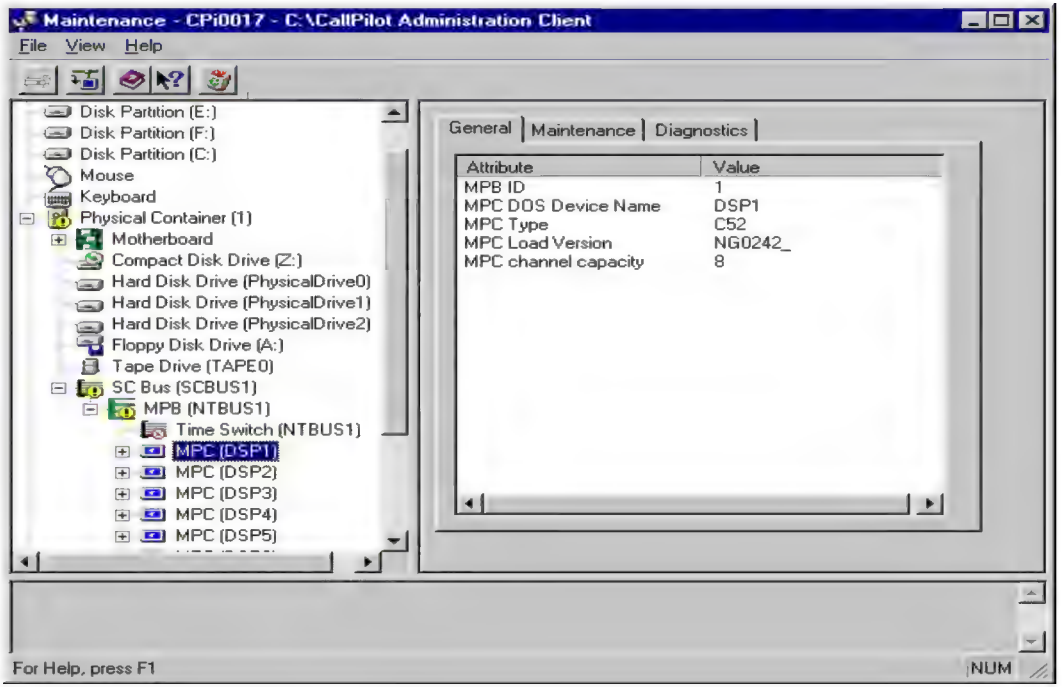
When you select a component in the Maintenance window, at least one of the following tabs appear:

Tab	Description
General	This page shows general technical information about the selected component.
Maintenance	This page shows the state of the selected component. You can also take some components out of service from this page.
Diagnostics	This page enables you to run component-specific diagnostics.
Replacement	This page shows replacement part numbers for selected components. This option is not available for all platforms. Contact your distributor for latest part number information.

Note: The components in the Maintenance window vary based on the type of switch connected to CallPilot and the server type. The dialog box examples in this chapter are for illustration purposes and might not appear exactly the same on your system. References to the SCbus, Master Timeswitch, and MPB are not applicable to the 200i server.

The General tab

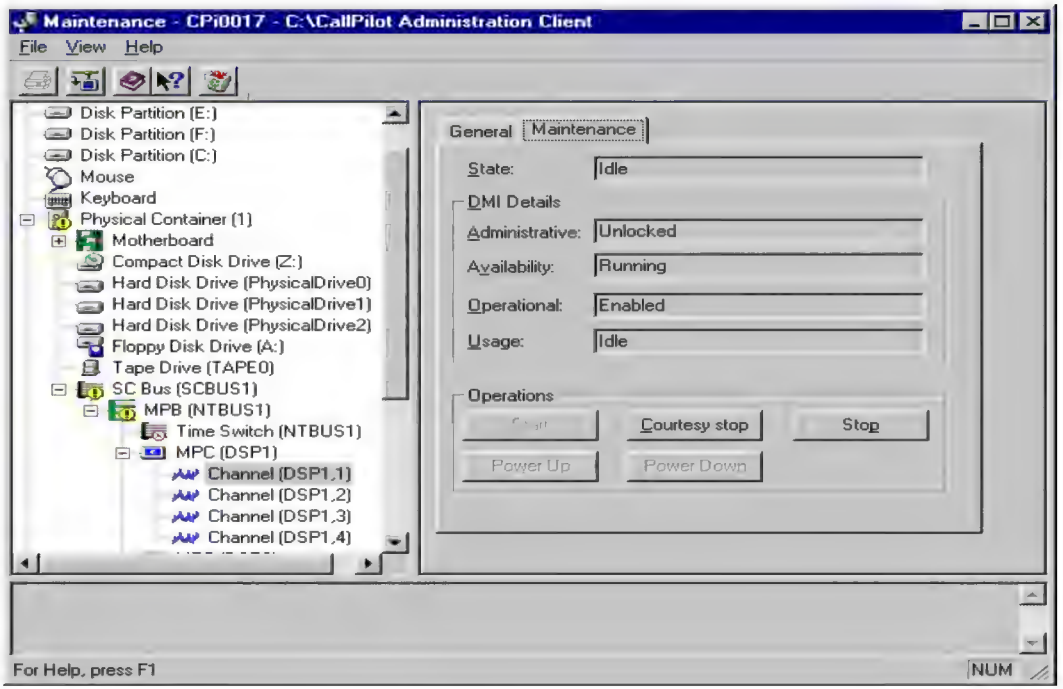
Use the General tab to view general information about components.



Box	Description
Attribute	Shows component-specific general technical information.
Value	Shows additional details, such as the speed of a selected device.

The Maintenance tab

Use the Maintenance tab to view the state of the highlighted component and to start and stop a component before running a diagnostic test.

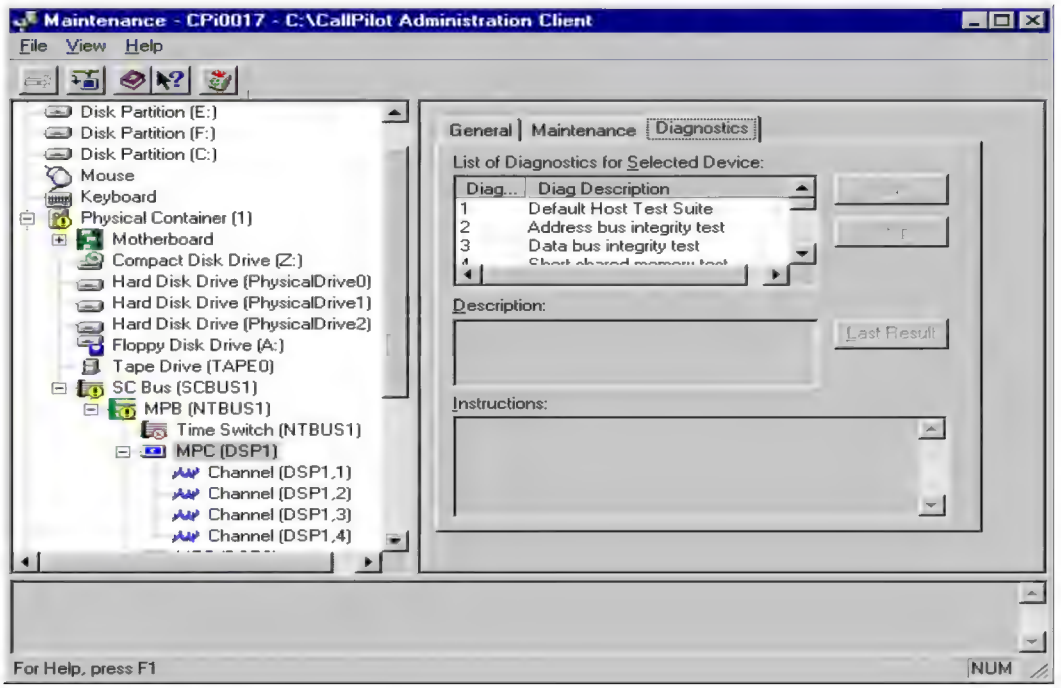


Box	Description
State	Specifies the state of the highlighted component.
Administrative	This is a Desktop Management Interface (DMI) summary state. You do not need this state.
Availability	This is a DMI summary state. You do not need this state.
Operational	This is a DMI summary state. You do not need this state.
Usage	This is a DMI summary state. You do not need this state.
Stop	Use this button to take the selected device out of service immediately. All calls in progress are disconnected. **Caution:** For CallPilot servers connected to a Lucent, Mitel, or Rolm switch, if you stop an individual call channel, the corresponding port on the switch side is not automatically disabled. As a result, calls can continue to land on the stopped channel resulting in a Ring-No-Answer. If you need to stop an individual channel, you have two options: ■ Busy-out the port on the switch side. This must be done manually by the switch administrator. ■ Courtesy stop the entire hunt group that contains the call channel or courtesy stop all call channels in the system. This caution does not apply to stopping DSP ports.

Box	Description
Courtesy stop	Use this button to take the selected device out of service after all calls are finished. This prevents any calls from being disconnected. **Caution:** For CallPilot servers connected to a Lucent, Mitel, or Rolm switch, if you stop an individual call channel, the corresponding port on the switch side is not automatically disabled. As a result, calls can continue to land on the stopped channel resulting in a Ring-No-Answer. If you need to stop an individual channel, you have two options: ■ Busy-out the port on the switch side. This must be done manually by the switch administrator. ■ Courtesy stop the entire hunt group that contains the call channel or courtesy stop all call channels in the system. This caution does not apply to stopping DSP ports.
Start	Use this button to put the selected device in service.
Power Up	Use this button to power up an MPC-8 card that had been powered down. You can only use this button for MPC-8 cards on a 200i server.
Power Down	Use this button to power off an MPC-8 card prior to replacing it. You can only use this button for MPC-8 cards on a 200i server.

The Diagnostics tab

Use the Diagnostics tab to run a diagnostic test or to view the results of the last diagnostic test run on a component.

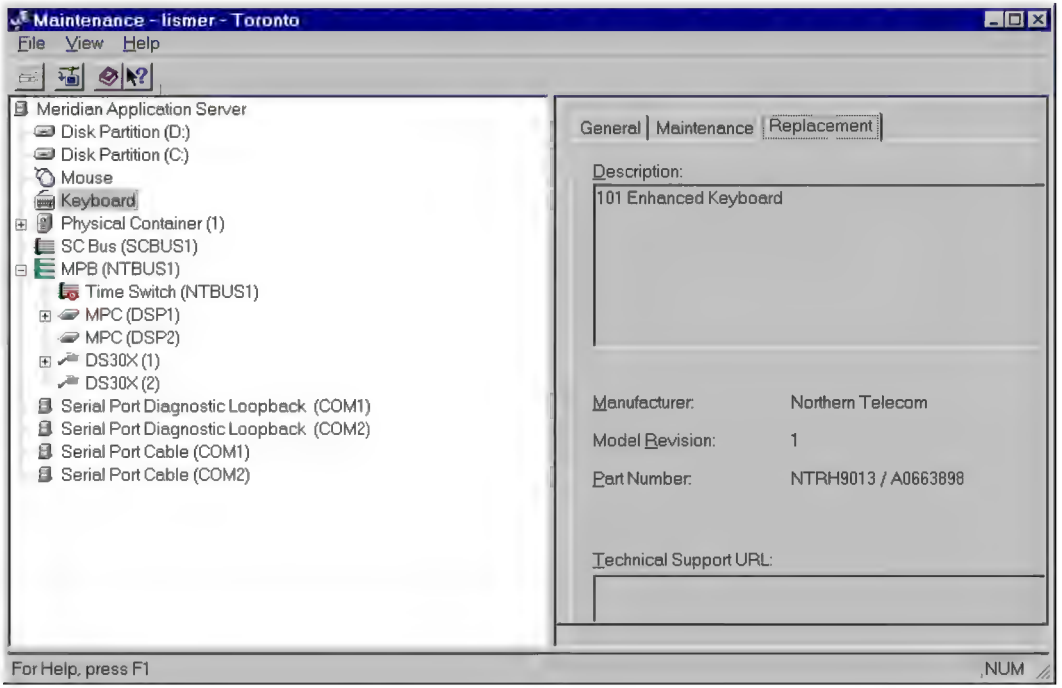


Box	Description
List of Diagnostics for Selected Device	Shows the diagnostic tests that are available for the highlighted component.
Run	Use this button to run the selected diagnostics. For the Timeswitch and MPC components, go to the Maintenance tab to courtesy stop the component before you run diagnostics.
Stop	Use this button to stop the selected diagnostics

Box	Description
Last Result	Use this button to view the results of the last diagnostic test. The results include a list of Field Replaceable Units (FRU), which, if replaced, might fix the problem. Each FRU is shown with a percentage that shows how probable it is that the component caused the hardware problem.
Description	Shows a comment or description for a selected diagnostic test.
Instructions	Shows the instructions for the user to run the diagnostic test.

The Replacement tab

The Replacement tab shows component part number information. This tab is not available for all platforms. To be certain you have the latest component information, contact your distributor.



Box	Description
Description	Shows the name of the highlighted component.
Manufacturer	Shows the manufacturer of the component.
Model Revision	Shows the revision number for the component.
Part Number	Shows the part number for the component.
Technical Support URL	Shows a web site address where you can get technical support.

Obtaining general information about components

Introduction

Find general technical information for each hardware component listed in the tree using the General tab of the Maintenance window.

For a description of the General tab, see "The General tab" on page 86.

Type of technical information

Technical information about hardware components typically includes details such as the following:

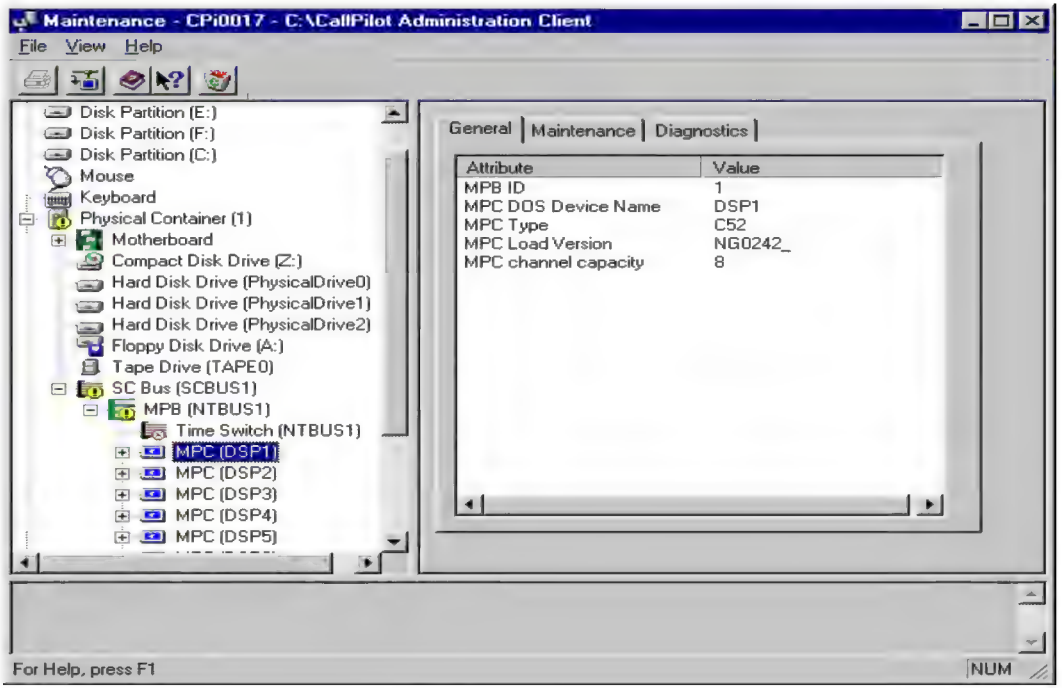
- the name, class, type, series, or version of a component
- various capabilities of a component (for example, the speed of a CPU)
- the available disk space

Getting there CallPilot system > System Administration > Maintenance
Administration > Maintenance

To view component details

1 From the left pane of the Maintenance window, select the hardware component about which you want to obtain information.

Result: The General page appears with general information shown.



Viewing component states

Introduction

View a component's state to determine the general condition of the component, including whether the component is disabled or off duty. You can view the state of components that are listed in the Maintenance tab of the Maintenance window.

For a description of the Maintenance tab, see "The Maintenance tab" on page 87.

Component states

The state of a hardware component changes depending on the following factors:

- whether the component is currently involved in processing a call
- whether a diagnostic test is being run on the component
- whether the component is out of service

You can determine the state of a component by looking at the State field in the Maintenance tab.

State	Description
Active	The component is working and currently involved in processing a call.
Idle	The component is working but not currently involved in processing a call.
Uninstalled	The component is not installed or properly configured. This usually happens only when the system is being configured, or if the database is corrupted.
Shutting Down	The component is in the process of stopping. This state occurs quickly and is immediately followed by Off Duty.

State	Description
Loading	The component has been started, which takes it out of the Off Duty state. This state occurs quickly and is immediately followed by Idle.
No resources	The hardware required for the component to operate is not installed or not operating properly.
Off duty	The component has been stopped.
Remote Off Duty	The component has been taken out of service at the switch.

Details

These states (Administrative, Availability, Operational, and Usage) are standard Desktop Management Interface (DMI) states. They are shown for administrators who understand and use the DMI standard in other aspects of their jobs. You do not need to use the DMI states; the summary state listed in the State field is provided instead.

Alert icons

If one of the following icons appears next to a component in the tree, the component or one of its subcomponents is experiencing a problem:

Icon	Description
	This means that a diagnostic test run on the component has failed and the component has been placed into disabled status. You must view the last results of the diagnostic test. See "Viewing last diagnostic results" on page 105.
	This means that a problem exists with one of the component's subcomponents. Expand the tree to locate the subcomponent with the problem.

Getting there CallPilot system > System Administration > Maintenance Administration > Maintenance

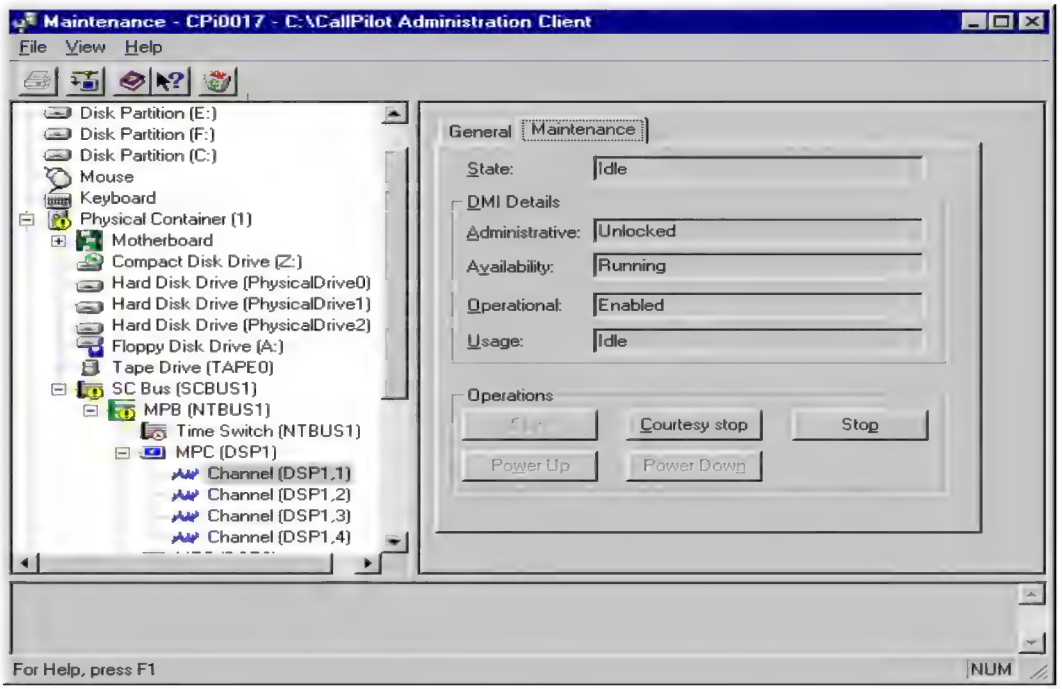
To view the state of a hardware component

1 From the left pane of the Maintenance window, select the hardware component.

Result: The General page appears.

2 From the right pane, click the Maintenance tab.

Result: The Maintenance page appears.



3 View the state of the selected component in the State field.

Starting and stopping components

Introduction

When you stop a component, it goes out of service and stops operating. You must either stop or courtesy stop a component before you can run a diagnostic test on it.

ATTENTION

Nortel Networks recommends that you courtesy stop a component if possible.

In the Maintenance window, the courtesy stop option is available only at the individual channel level.

To courtesy down CallPilot, use the Multimedia Monitor to courtesy stop all DSPs.

To courtesy stop a range of multimedia channels or all multimedia channels on an MPC [DSP] card, use the Multimedia Monitor. See "Checking channel status" on page 79 for an overview of the Channel Monitor and Multimedia Monitor.

When you start a channel, it goes back into service. You must start a channel after replacing it, or after running a successful diagnostic test, to bring it back into service.

Courtesy stop

A courtesy stop takes the component out of service only after the component has finished processing the active call. If the component is currently processing a call, the call is not dropped. If the component is not currently in use, it is taken out of service immediately. This method is preferred over a regular stop.

Stop

A stop takes the component out of service immediately, regardless of whether the component is currently processing calls. All active calls are dropped. Typically, you perform a stop only when severe problems occur that are affecting a large number of incoming calls, or if your organization determines a special need for it.

CAUTION

Risk of Ring No Answer on disabled (stopped) call channel on Lucent, Mitel, or Rolm systems

For CallPilot servers connected to a Lucent, Mitel, or Rolm switch, if you stop an individual call channel, the corresponding port on the switch side is not automatically disabled. As a result, calls can continue to land on the stopped channel resulting in a Ring-No-Answer.

If you need to stop an individual channel, you have two options:

- Busy-out the port on the switch side. This must be done manually by the switch administrator.
- Courtesy stop the entire hunt group that contains the call channel or courtesy stop all call channels in the system.

This caution does not apply to stopping DSP ports.

Components that can be started and stopped

This section lists components that can be started and stopped.

If you want to start or stop more than one or two multimedia or call channels, use the Channels windows. See "Checking channel status" on page 79 for an overview of the Channel Monitor and Multimedia Monitor. For detailed information, refer to the *Monitoring and Security for the Administrator* guide.

Note: Based on the type of switch connected to CallPilot and the server type, some of these components do not appear or do not have the Stop option:

Component	Effect of stopping
SCbus	takes out of service all call processing resources
Timeswitch	takes out of service the MPB16 card that is serviced by the timeswitch

Component	Effect of stopping
MPC-8 cards	takes out of service the selected MPC-8 card
Multimedia (DSP) channels	takes out of service the selected DSP channel
Switch Interface Link (found under the Switch Interface Card component)	takes out of service the selected link to the switch
Call channels	takes out of service the selected call channel
DS30x link	takes out of service the selected DS30x link

Getting there CallPilot system > System Administration > Maintenance Administration > Maintenance

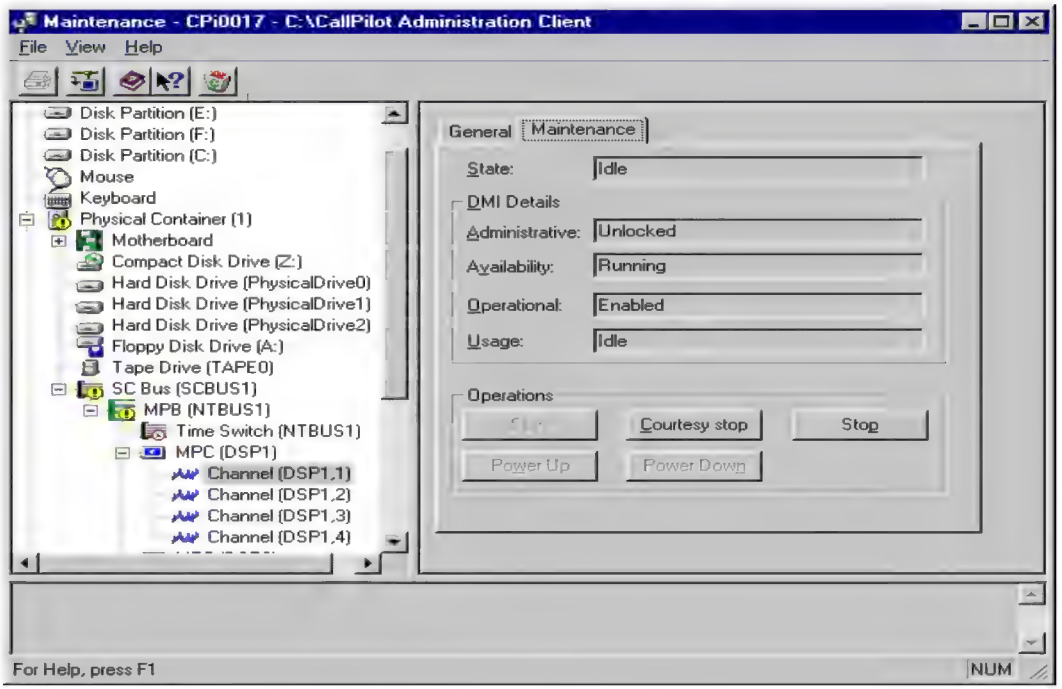
To start or stop a component in the Maintenance window

1 From the left pane of the Maintenance window, select the hardware component you want to start or stop.

Result: The General page appears.

2 From the right pane, click the Maintenance tab.

Result: The Maintenance page appears.



3 Click Start, Courtesy Stop, or Stop.

Running integrated diagnostics

Introduction

You should run diagnostic tests from the Diagnostic tab in the Maintenance window in the following circumstances:

- After installing or reinstalling a component, make sure it is operating properly. (A component must be Off Duty [stopped] before you can run the diagnostic test. See "Starting and stopping components" on page 98.)
- Run the tests if the CallPilot server experiences trouble processing incoming calls. Problems include static, dropped calls, and cross talk (hearing another conversation).

Note: For a description of the Diagnostic tab, see "The Diagnostics tab" on page 90.

List of components that have diagnostic tests available

- MPC (DSPs)
- Timeswitch (depending on the switch type, diagnostics might not be available)

To view available diagnostic tests

The available diagnostic tests for each component appear in the Diagnostic page of the Maintenance window. Click a component to see the diagnostic tests available for that component.

If a diagnostic test fails or cannot be run

If a warning box appears, the diagnostic test cannot be run because a prerequisite condition has not been met. If a diagnostic test fails, the failure is indicated at the bottom of the Diagnostic tab.

In both cases, check the Alarm Monitor to determine the reason and the appropriate action to take. (See "Detecting, isolating, and fixing hardware problems" on page 73.)

To run a diagnostic test

Note: See "Starting and stopping components" on page 98 for details about courtesy stopping a component. Nortel Networks recommends that you courtesy stop rather than stop a component if possible.

1 From the left pane of the Maintenance window, select the hardware component for which you want to run a diagnostic test.

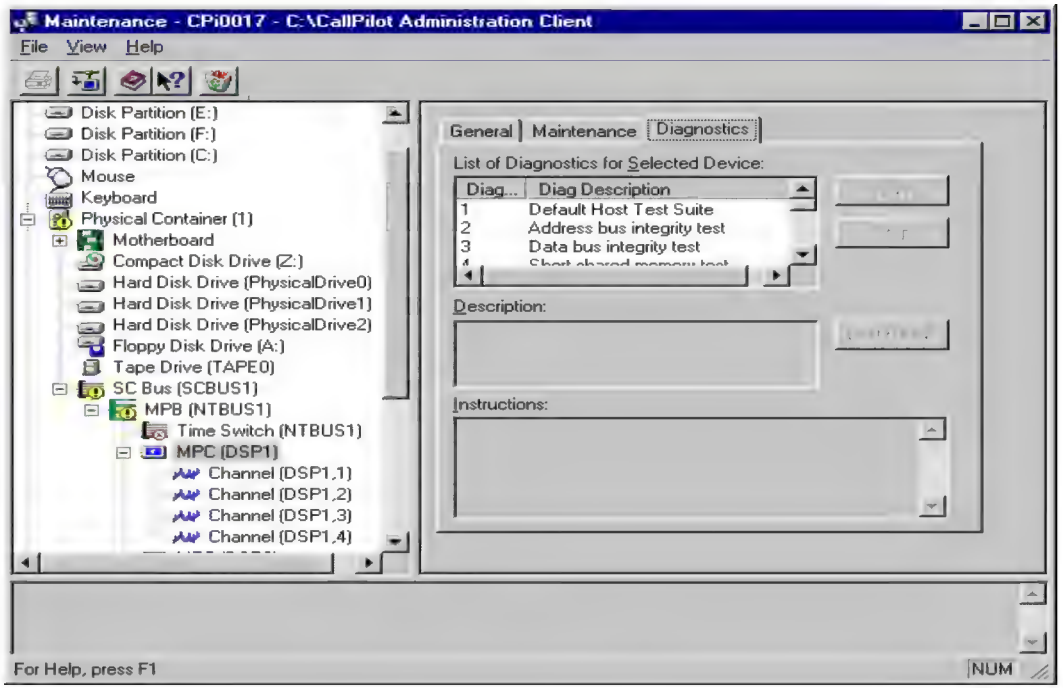
2 From the right pane, click the Maintenance tab.

Result: The Maintenance page appears.

3 Stop the component.

4 From the right pane, click the Diagnostic tab.

Result: The Diagnostic page appears.



5 Select the diagnostic test you want to run.

6 Click Run.

7 View the diagnostic test results at the bottom of the Diagnostic page.

Viewing last diagnostic results

Introduction

If the Alarm Monitor and Event Browser do not provide a solution to a hardware problem, a component might need to be replaced or serviced. If the problem rests with a component that is not replaceable because it is not a physical entity (such as the timeswitch), you must replace its parent component or contact technical support, depending on the component.

Replaceable parts are called Field Replaceable Units (FRUs). View the last diagnostic test result in the Diagnostic tab of the Maintenance window to obtain a list of FRUs that, when replaced, will likely fix the problem.

Notes:

1. For general information on investigating hardware problems, see "Detecting, isolating, and fixing hardware problems" on page 73.
2. For a description of the Diagnostic tab, see "The Diagnostics tab" on page 90.

Field replaceable units

When you view the last results of a failed diagnostic test, a Diagnostic Result description appears at the bottom of the Diagnostic tab. This description includes a list of components that might have caused the problem.

Each FRU is shown with a percentage that represents how probable it is that the component caused the hardware problem. Use these percentages as a guide to determine which component to try replacing first; the higher the percentage of probability, the better the chance that replacing the FRU will fix the problem.

To view the last diagnostics result

1 From the left pane of the Maintenance window, select the hardware component.

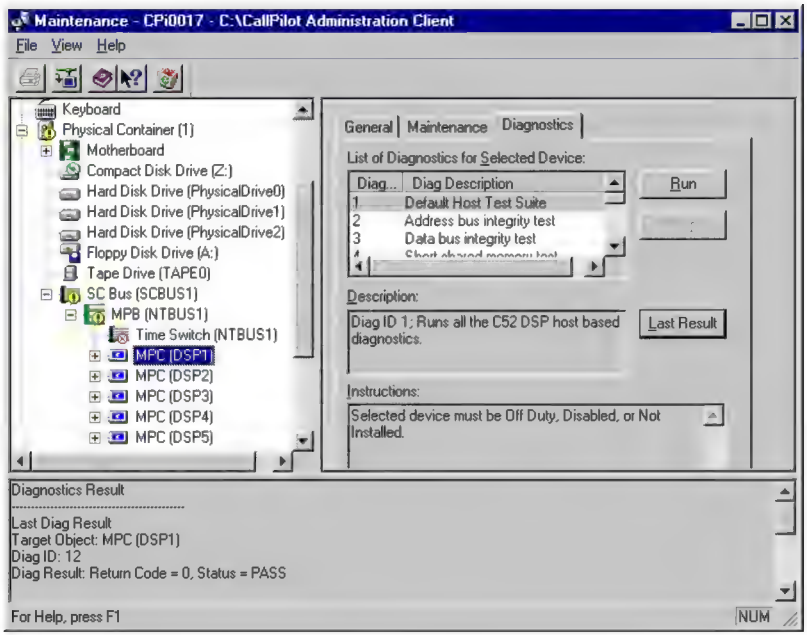
Result: The General page appears.

2 From the right pane, click the Diagnostics tab.

Result: The Diagnostics page appears.

3 Click Last Result.

Result: The results of the last diagnostic test appear at the bottom of the Diagnostics page.



4 View the last results to determine what action to take.

Last diagnostic results

The results of the last diagnostic test display the following information at the bottom of the Diagnostic page:

Information	Description
Target Object	This is the component selected in the tree.
Diag ID	This is the ID of the diagnostic test that was run. The diagnostics IDs and descriptions are listed in the List of Diagnostics for Selected Device window on the Diagnostics page.
Diag result	The diagnostic result includes a return code and whether the diagnostic test passed or failed.
Result Description	This section appears only when the diagnostic test fails. This is a more detailed description of the problem. This description includes the following: ■ the error that was encountered ■ a list of components that might have caused the error with a probability percentage ■ troubleshooting instructions

Obtaining replacement part numbers

Introduction

If you determine that a component needs to be replaced, contact your distributor.

The Replacement tab in the Maintenance window provides component information. However, your distributor has the latest part number information. The Replacement tab is not available on all platforms.

Chapter 5

System utilities

In this chapter

Overview	110
Diagnostics	111
PEP Maintenance utility	114
Services Monitor	116
Session Trace	118
System Information	126
System Monitor	128
VoiceBridge Monitor	131

Overview

Introduction

The following table lists the CallPilot system utilities:

Diagnostic	Enables CallPilot startup diagnostics to be enabled or disabled (turned on or off).
PEP Maintenance	Displays a list of installed PEPs and enables PEP uninstall.
Services Monitor	Displays the true status of all CallPilot services according to WinNT definition.
Session Trace	Provides detailed information about the activity in a user's mailbox and the state of the message waiting indicator (MWI).
System Information	Displays particulars about the CallPilot System such as names, keycodes, serial numbers, IP addresses, and system numbers.
System Monitor	Displays the status of all CallPilot subsystems related to call processing.
VoiceBridge Monitor	Troubleshooting tool that provides phone simulation for the DSE connectivity.

Accessing the System Utilities

All CallPilot customer administrator tools are accessible from the server using Start > Programs > CallPilot > System Utilities.

Diagnostics

Introduction

The Diagnostics startup utility is a graphical user interface that enables CallPilot startup diagnostics to be enabled or disabled as required by the user or the system.

CallPilot startup diagnostics automatically identifies hardware problems that might exist when the system and its services are started (DSP, TimeSwitch, SCbus).

This tool saves time during system maintenance operations where restarts or Call Processing services restarts are required.

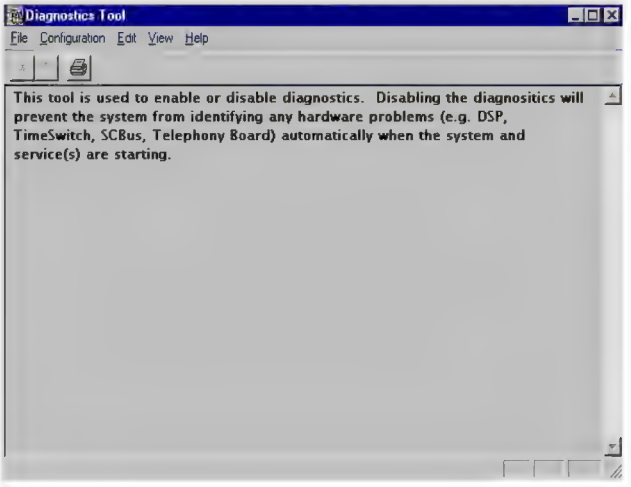
There are three recommended steps:

- Use the Diagnostics tool to turn off CallPilot startup diagnostics.
- Perform system maintenance.
- Use the Diagnostics tool to turn on CallPilot startup diagnostics.

To access the startup Diagnostic Tool utility

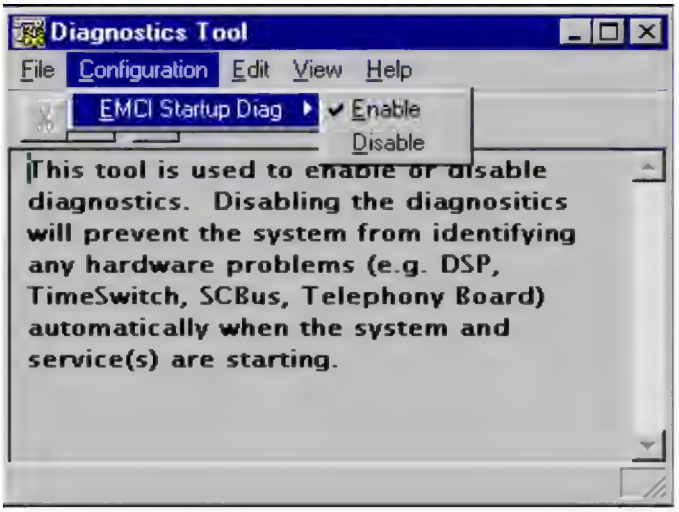
From the Windows Start menu, click Programs > CallPilot > System Utilities > Diagnostic Tool.

Result: The Diagnostics Tool window appears.


Diagnostics Tool
File Configuration Edit View Help
This tool is used to enable or disable diagnostics. Disabling the diagnositics will prevent the system from identifying any hardware problems (e.g. DSP, TimeSwitch, SCBus, Telephony Board) automatically when the system and service(s) are starting.

To enable startup diagnostics

From the menu, select Configuration > EMCI Startup Diag > Enable.


Diagnostics Tool
File
Configuration
Edit
View
Help
EMCI Startup Diag
Enable
Disable
This tool is used to enable or disable diagnostics. Disabling the diagnositics will prevent the system from identifying any hardware problems (e.g. DSP, TimeSwitch, SCBus, Telephony Board) automatically when the system and service(s) are starting.

To disable startup diagnostics

From the menu, select Configuration > EMCI Startup Diag > Disable.

Note: Nortel Networks recommends that you leave the startup diagnostics turned on.

When you disable CallPilot startup diagnostics; you prevent CallPilot from automatically identifying hardware problems that might exist when the system and its services are started (DSP, TimeSwitch, SCbus).

PEP Maintenance utility

Introduction

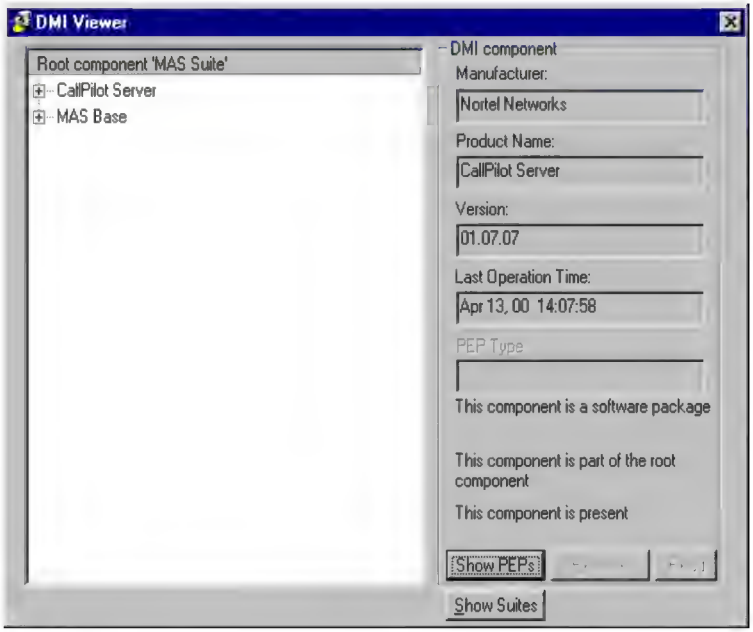
The PEP Maintenance utility displays a list of all installed PEPs on the server and enables you to uninstall PEPS.

For information on uninstalling PEPs, refer to "Installing PEPs" on page 302.

To access the PEP Maintenance utility

From the Windows Start menu, click Programs > CallPilot > System Utilities > PEP Maintenance.

The DMI Viewer window appears.

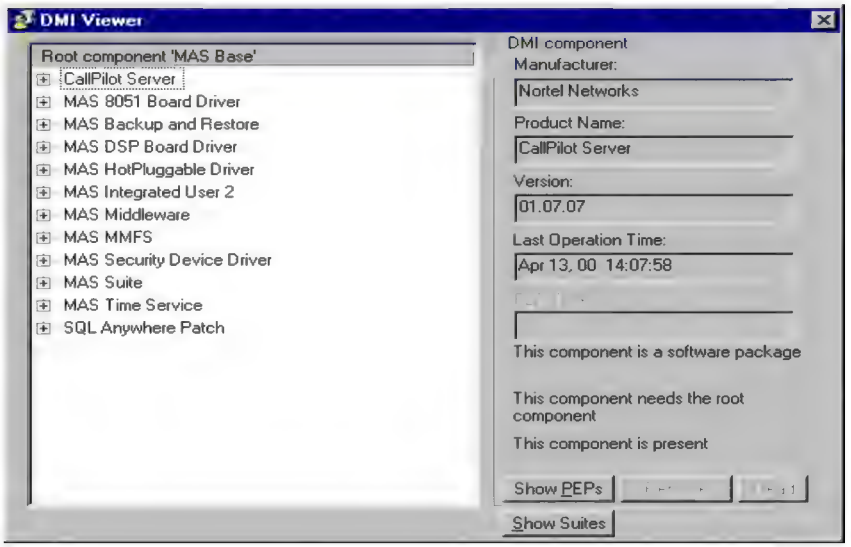


To view a list of all installed PEPs

1 Click the component to display the PEP list.

2 Click Show PEPs.

Result: A list of all installed PEPs appears to the right of the window.



Services Monitor

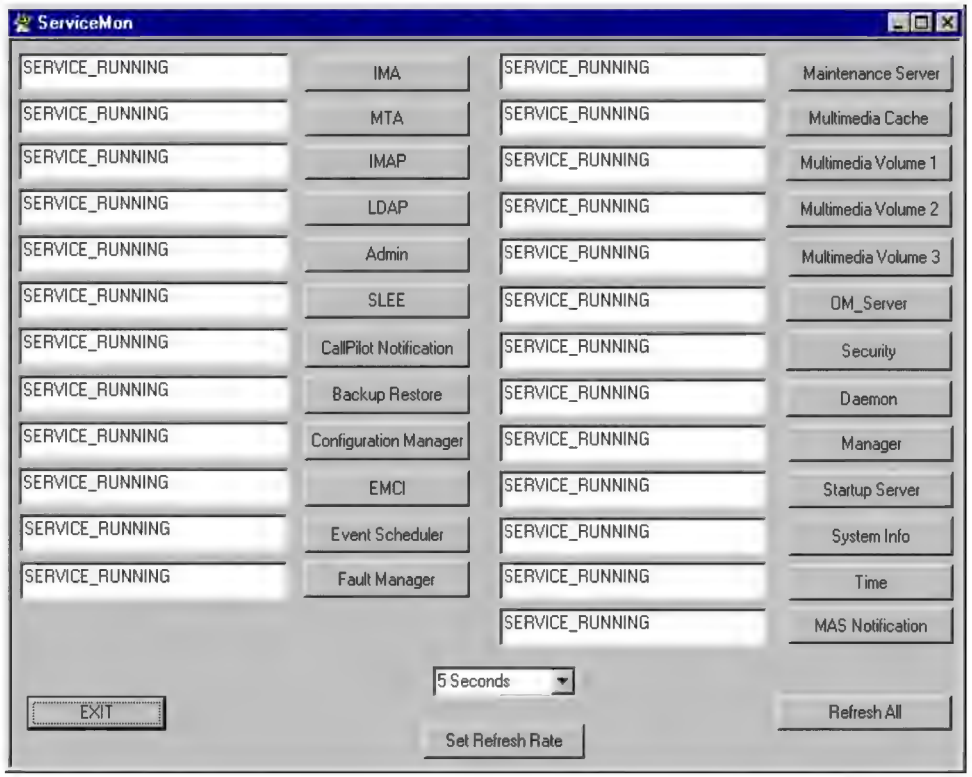
Introduction

The Services Monitor is a graphical user interface tool that helps to determine whether the CallPilot server is fully operational. It displays true states of the CallPilot services according to Windows NT definition, including the states that are not available through the control panel.

To access the Services Monitor

From the Windows Start menu, click Programs > CallPilot > System Utilities > Service Monitor.

Result: The ServiceMon window appears.



Using the Services Monitor

The Services Monitor provides the status of each CallPilot service (for example, running, any pending or pausing state).

The Refresh All button enables the display to be refreshed. Use the Set Refresh Rate button to set the rate of refresh or set to none.

Note: The fact that a service is running does not necessarily mean that it is fully operational. It might require some initialization, database connections, internal data structures, and so on.

Session Trace

Introduction

The Session Trace tool allows you to obtain detailed information about the activity in a user's mailbox and the state of the message waiting indicator (MWI). The session information includes

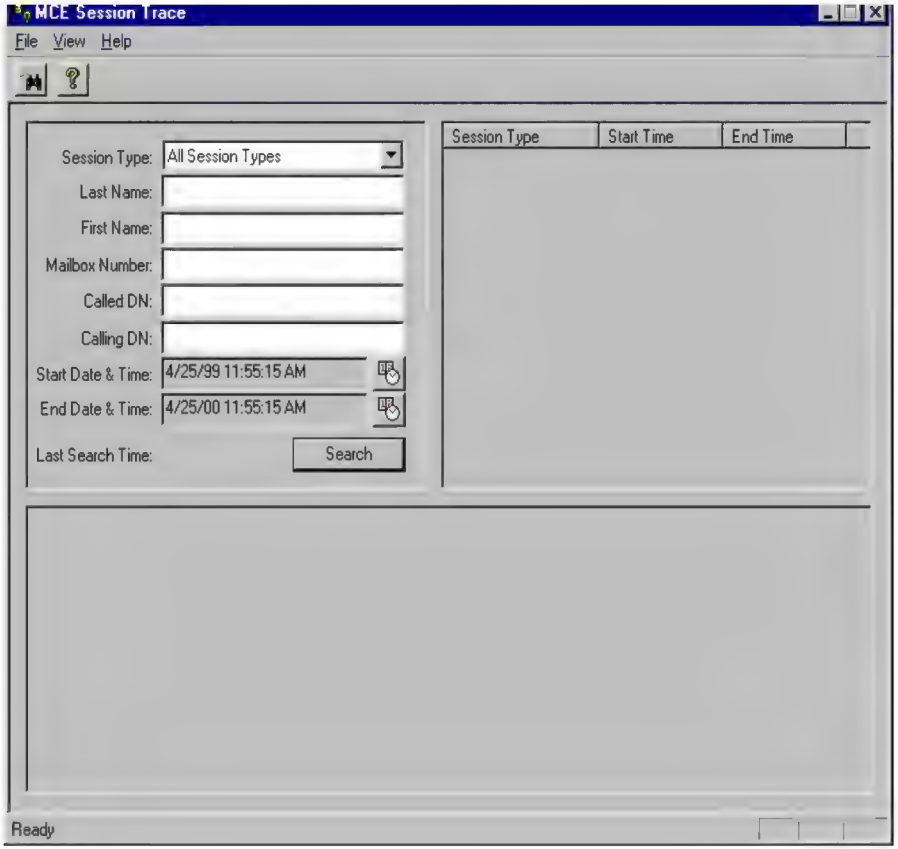
- voice messaging
- call answering
- express messaging activity (messages composed and sent, or left in a mailbox)
- the number of messages played or unplayed at the beginning, middle, and end of a session
- messages and personal distribution lists restored into a mailbox
- the last change to the MWI (turned on or off, or untouched)

This session information allows an administrator or technician to study the state of a user's mailbox and the MWI, and to use that information to follow up on any user complaints. For example, a user might complain that the MWI was on, but no voice messages were in the mailbox when the user logged on. The session information might tell the administrator why the MWI was turned on.

To access the session trace tool

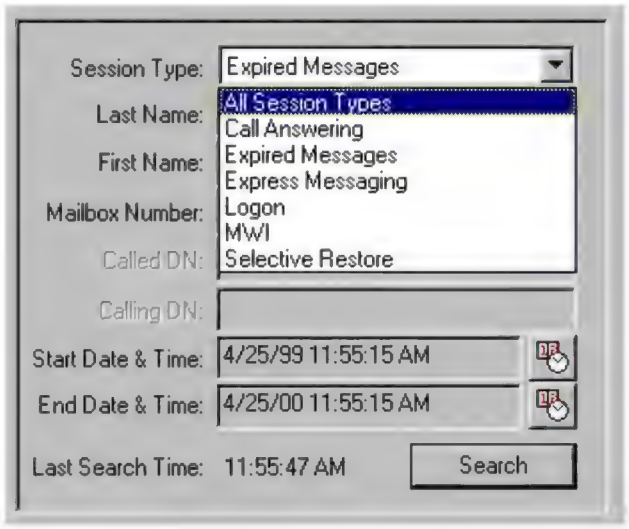
From the Windows Start menu, click Programs > CallPilot > System Utilities > Session Trace Tool.

Result: The MCE Session Trace window appears.


MCE Session Trace
File View Help
Session Type:
All Session Types
Last Name:
First Name:
Mailbox Number:
Called DN:
Calling DN:
Start Date & Time:
4/25/99 11:55:15 AM
End Date & Time:
4/25/00 11:55:15 AM
Last Search Time:
Search
Session Type
Start Time
End Time
Ready

To find a session

1 From the Session Type drop-down menu, select the type of session.



To display a list of all session types, select All Session Types.

2 Enter as much information in the search criteria fields in the window to identify the session you want to view.

To display a list of all users for the selected Session Type, leave the search criteria fields blank.

3 Click Search to initiate the search.

a. If you did not enter any user information, a list of users matching the Session Type appears on the bottom of the window.

To select a user from the list, double-click the user name to display session type information.

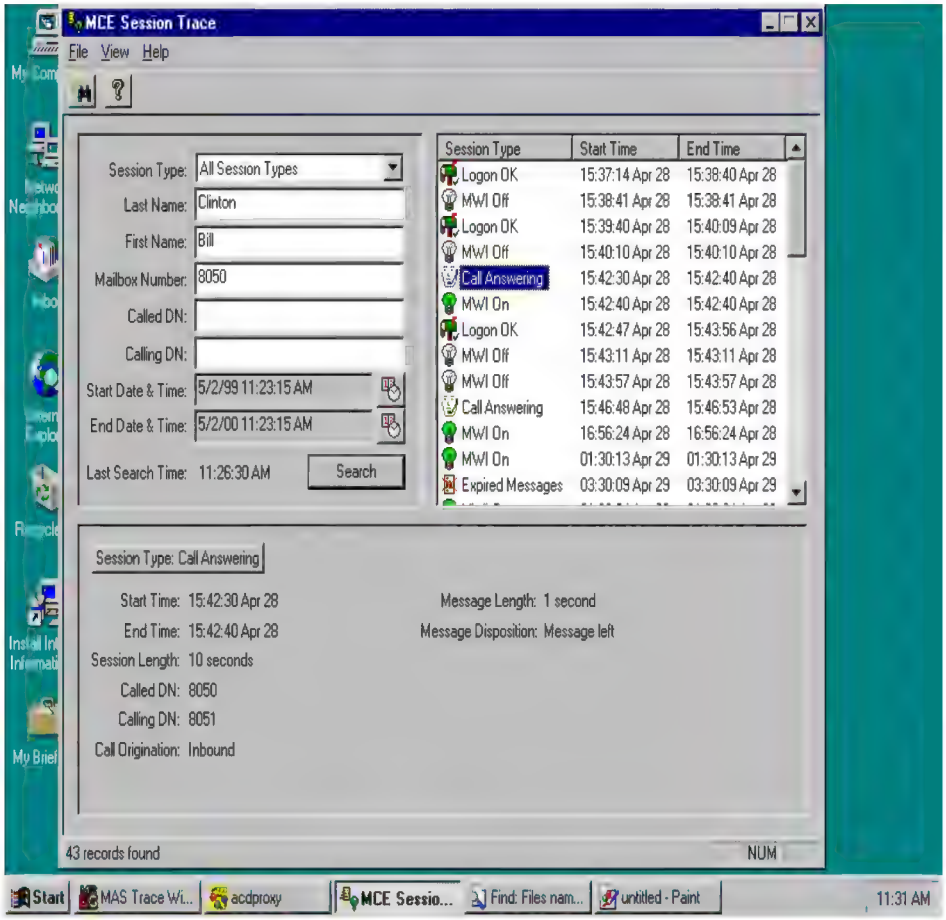
b. If you selected All Session Types for a user, the session type information appears to the right of the window.

4 Double-click the session type to display the session information.

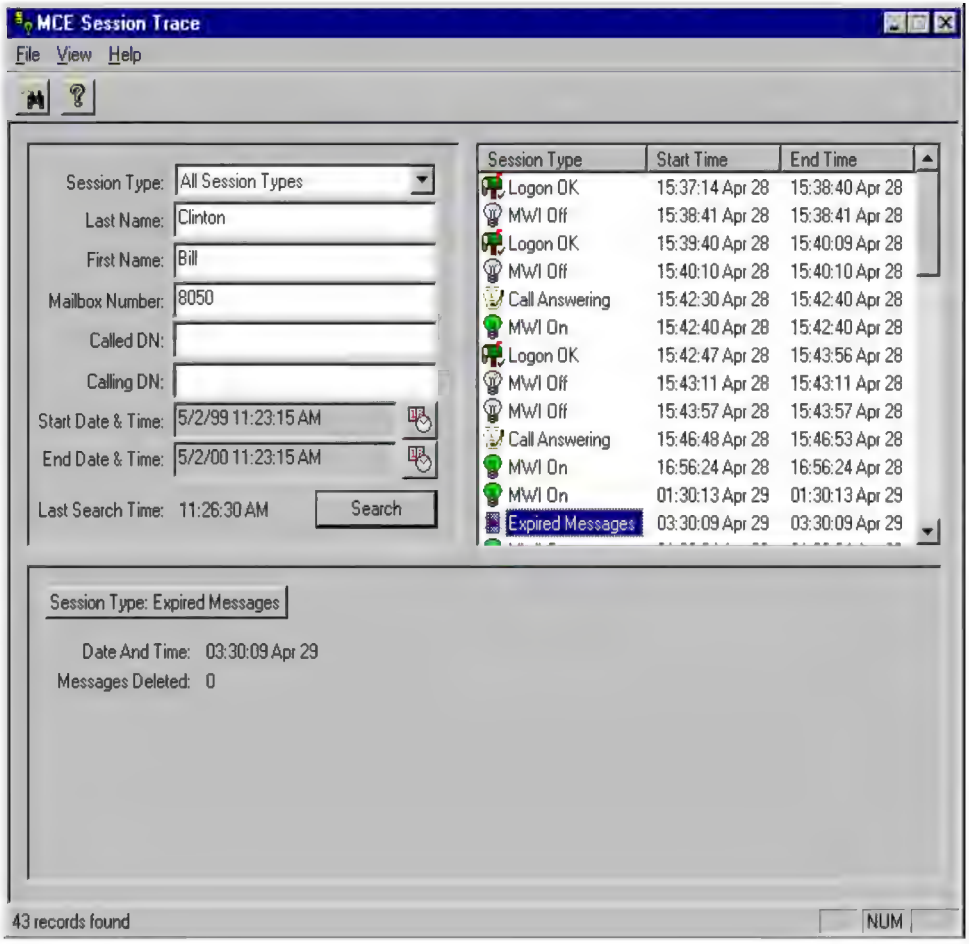
Result: The Session Type information appears on the bottom of the window.

Session type information

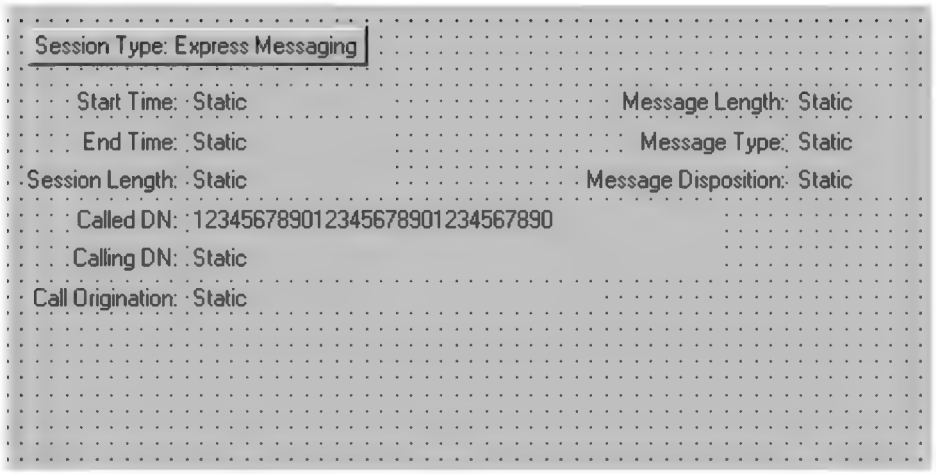
Call Answer session type information


MCE Session Trace
File View Help
Session Type: All Session Types
Last Name: Clinton
First Name: Bill
Mailbox Number: 8050
Called DN:
Calling DN:
Start Date & Time: 5/2/99 11:23:15 AM
End Date & Time: 5/2/00 11:23:15 AM
Last Search Time: 11:26:30 AM
Search
Session Type | Start Time | End Time
Logon OK 15:37:14 Apr 28 15:38:40 Apr 28
MWI Off 15:38:41 Apr 28 15:38:41 Apr 28
Logon OK 15:39:40 Apr 28 15:40:09 Apr 28
MWI Off 15:40:10 Apr 28 15:40:10 Apr 28
Call Answering 15:42:30 Apr 28 15:42:40 Apr 28
MWI On 15:42:40 Apr 28 15:42:40 Apr 28
Logon OK 15:42:47 Apr 28 15:43:56 Apr 28
MWI Off 15:43:11 Apr 28 15:43:11 Apr 28
MWI Off 15:43:57 Apr 28 15:43:57 Apr 28
Call Answering 15:46:48 Apr 28 15:46:53 Apr 28
MWI On 16:56:24 Apr 28 16:56:24 Apr 28
MWI On 01:30:13 Apr 29 01:30:13 Apr 29
Expired Messages 03:30:09 Apr 29 03:30:09 Apr 29
Session Type: Call Answering
Start Time: 15:42:30 Apr 28
End Time: 15:42:40 Apr 28
Session Length: 10 seconds
Called DN: 8050
Calling DN: 8051
Call Origination: Inbound
Message Length: 1 second
Message Disposition: Message left
43 records found
NUM
Start
MAS Trace Wi...
acdproxy
MCE Sessio...
Find: Files nam...
untitled - Paint
11:31 AM

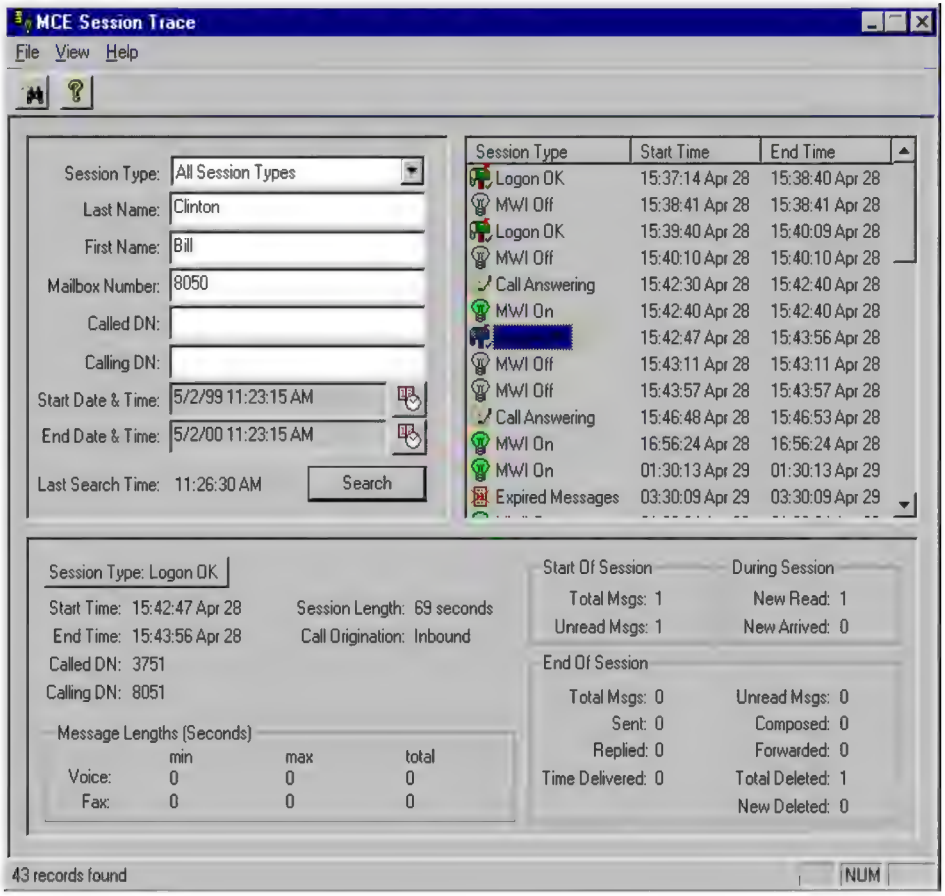
Expired messages session type information


MCE Session Trace
File View Help
Session Type: All Session Types
Last Name: Clinton
First Name: Bill
Mailbox Number: 8050
Called DN:
Calling DN:
Start Date & Time: 5/2/99 11:23:15 AM
End Date & Time: 5/2/00 11:23:15 AM
Last Search Time: 11:26:30 AM
Search
Session Type
Start Time
End Time
Logon OK 15:37:14 Apr 28 15:38:40 Apr 28
MWI Off 15:38:41 Apr 28 15:38:41 Apr 28
Logon OK 15:39:40 Apr 28 15:40:09 Apr 28
MWI Off 15:40:10 Apr 28 15:40:10 Apr 28
Call Answering 15:42:30 Apr 28 15:42:40 Apr 28
MWI On 15:42:40 Apr 28 15:42:40 Apr 28
Logon OK 15:42:47 Apr 28 15:43:56 Apr 28
MWI Off 15:43:11 Apr 28 15:43:11 Apr 28
MWI Off 15:43:57 Apr 28 15:43:57 Apr 28
Call Answering 15:46:48 Apr 28 15:46:53 Apr 28
MWI On 16:56:24 Apr 28 16:56:24 Apr 28
MWI On 01:30:13 Apr 29 01:30:13 Apr 29
Expired Messages 03:30:09 Apr 29 03:30:09 Apr 29
Session Type: Expired Messages
Date And Time: 03:30:09 Apr 29
Messages Deleted: 0
43 records found
NUM

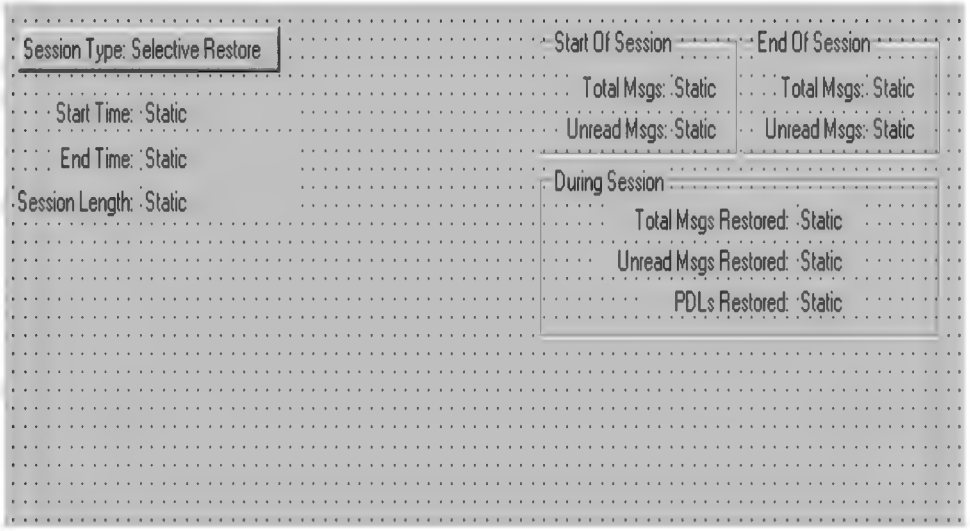
Express messaging session type information



Logon session type information


MCE Session Trace
File View Help
Session Type: All Session Types
Last Name: Clinton
First Name: Bill
Mailbox Number: 8050
Called DN:
Calling DN:
Start Date & Time: 5/2/99 11:23:15 AM
End Date & Time: 5/2/00 11:23:15 AM
Last Search Time: 11:26:30 AM
Search
Session Type | Start Time | End Time
Logon OK 15:37:14 Apr 28 15:38:40 Apr 28
MWI Off 15:38:41 Apr 28 15:38:41 Apr 28
Logon OK 15:39:40 Apr 28 15:40:09 Apr 28
MWI Off 15:40:10 Apr 28 15:40:10 Apr 28
Call Answering 15:42:30 Apr 28 15:42:40 Apr 28
MWI On 15:42:40 Apr 28 15:42:40 Apr 28
15:42:47 Apr 28 15:43:56 Apr 28
MWI Off 15:43:11 Apr 28 15:43:11 Apr 28
MWI Off 15:43:57 Apr 28 15:43:57 Apr 28
Call Answering 15:46:48 Apr 28 15:46:53 Apr 28
MWI On 16:56:24 Apr 28 16:56:24 Apr 28
MWI On 01:30:13 Apr 29 01:30:13 Apr 29
Expired Messages 03:30:09 Apr 29 03:30:09 Apr 29
Session Type: Logon OK
Start Time: 15:42:47 Apr 28
End Time: 15:43:56 Apr 28
Called DN: 3751
Calling DN: 8051
Session Length: 69 seconds
Call Origination: Inbound
Message Lengths (Seconds)
min max total
Voice: 0 0 0
Fax: 0 0 0
Start Of Session
Total Msgs: 1
Unread Msgs: 1
During Session
New Read: 1
New Arrived: 0
End Of Session
Total Msgs: 0
Sent: 0
Replied: 0
Time Delivered: 0
Unread Msgs: 0
Composed: 0
Forwarded: 0
Total Deleted: 1
New Deleted: 0
43 records found
NUM

Selective restore session type information



System Information

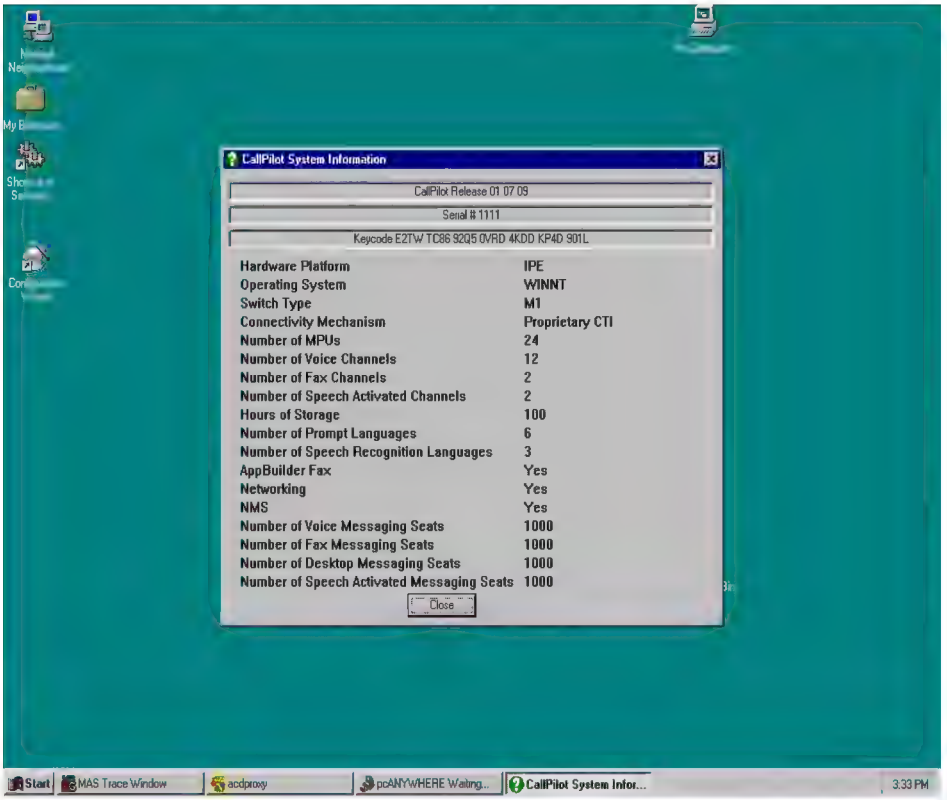
Introduction

Use this utility to view particulars about the CallPilot system, such as names, keycodes, serial numbers, IP addresses, and system numbers.

To access the System Information utility

From the Windows Start menu, choose Programs > CallPilot > System Utilities > System Information.

Result: The CallPilot System Information window appears.



To use the System Information utility

Use this utility to view CallPilot system information at a glance.

After viewing the information on this screen, click Close to close the window.

System Monitor

Introduction

The System Monitor is a graphical user interface based tool that provides a single point of view of CallPilot call processing status at any time. The status provided reflects the true internal status of the Call Processing subsystem, including all related call processing components. This eliminates the need to use multiple tools to get the same information.

The System Monitor queries the current status of each component it is monitoring and displays them in a graphical user interface. The status of each service is obtained from the Windows NT Service Controller; Middleware Components status are obtained from the CT Media server; and the DSP and Call channels status are obtained by querying Middleware.

This tool shows the status of

- CallPilot Critical Services related to call processing
- CT Media-based Middleware Services
- CallPilot Call Channels and Media Channels

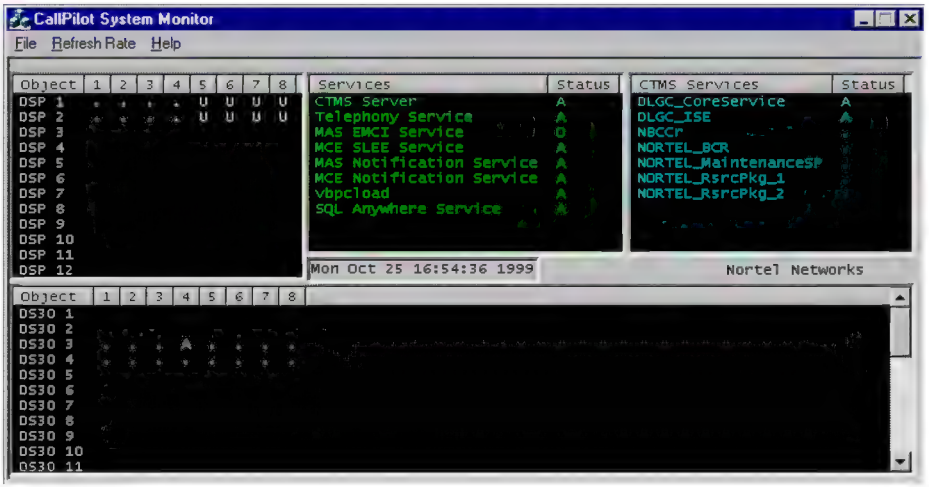
System Monitor is a nondestructive tool that does not alter the behavior of any CallPilot components.

Note: Users of this tool require an understanding of CallPilot and the components they want to monitor.

To access the System Monitor

From the Windows Start menu, click Programs > CallPilot > System Utilities > System Monitor.

Result: The CallPilot System Monitor window appears.



User interface

The user interface comprises four main areas listed below. Each area indicates the status of the particular components of the CallPilot server.

1. Services Area for Critical Windows NT-based services
2. CT Media Services Area for Middleware-based services
3. Call Channel Area for Call Arrival/Departure activities
4. Media Channel Area for DSP channel usage activities

CallPilot Critical Services

Critical Services needed for CallPilot Call Processing include

- CT Media Server Service
- Telephony Server (TAPI) Service
- MAS EMCI Service

- MAS Notification Service
- MCE SLEE Service
- MCE Notification Service
- SQL Anywhere Service
- VBPC Load Service (useful in a DSE system)

CT Media-based Middleware Services

Middleware resources needed for CallPilot include

- Dialogic CT Media Server Core Service
- Dialogic CT Media Server ISE Service
- Call Channel Resource Service
- Blue Call Router Service
- Media Resource Service
- Maintenance Service Provider Service

CallPilot Call Channels and Media Channels

Call and media channels needed for CallPilot include

- Multimedia Ports and Call Channel (DSP channel usage as well as Call Channel usage)

Online Help

To obtain a description of the various status codes for each of the window's components, use the online Help.

Menu items

The System Monitor tool provides several menu items for configuration:

File	Closes the tool.
Refresh rate	Changes the refresh rate to a desired level.
Help	Displays a legend for each status symbol shown.

VoiceBridge Monitor

Introduction

The VoiceBridge Monitor is a graphical user interface tool that provides help when the CallPilot DSE system is first configured by simulating a phoneset.

It can also be used to troubleshoot phoneset, line, cable, or switch-related problems should they occur.

The simulated phoneset provides the ability to

- answer an incoming call
- make an outbound call
- transfer an incoming call to another extension
- display dialed party extension
- show the carrier presence on the phoneset
- show other characteristics specific to the phoneset being simulated, such as time of day and other features programmed on the phoneset

Note: This tool is for DSE only. Users require an understanding of switches involved in DSE connectivity.

Installing VoiceBridge Monitor

The VoiceBridge Monitor can be installed from the CallPilot Server PEP CD. For information on installing VoiceBridge Monitor, refer to "Installing software for the Lucent, Mitel, and Rolm switch" on page 312.

It takes approximately three minutes to install this tool and requires a system restart.

To access VoiceBridge Monitor

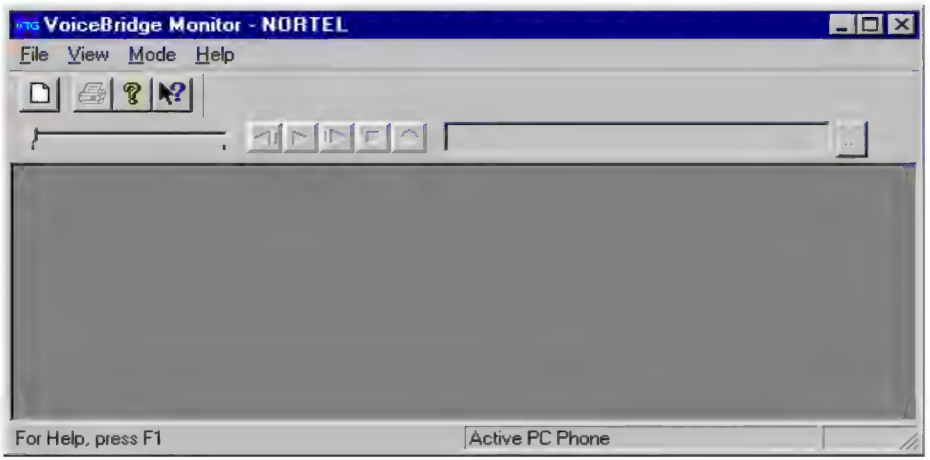
Click Start > Programs > VoiceBridge 2000 > VoiceBridge Monitor.

ATTENTION

Do not use this tool when CallPilot is in use as it can affect CallPilot operation. When this tool is connected to an external phoneset, you cannot hear on the soft phoneset.

Using the VoiceBridge Monitor

Once executed, the VoiceBridge Monitor tool appears.



Menu items

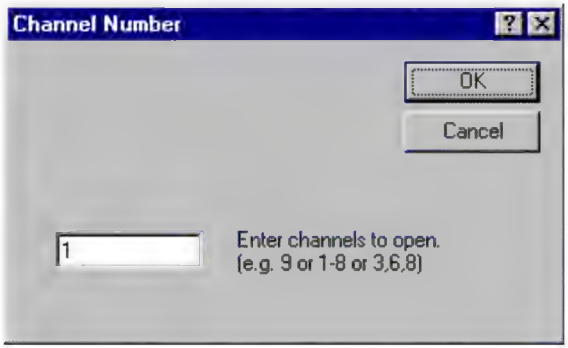
The VoiceBridge Monitor tool includes several menu items for configuration:

Mode menu	Allows for the selection of a different mode of operation. Only active mode is used with this tool in DSE connectivity.
File menu	Allows for the selection of a preferred channel for monitoring. Some channels can be opened.

Use the mode menu to select Active PC Phone mode.

Note: Nortel Networks recommends that you do not use other modes, as they require additional hardware components to function.

Once the Active PC Phone mode is selected, you can open any or all channels of the VoiceBridge boards from the File menu and view them, as shown below:



Using soft phones

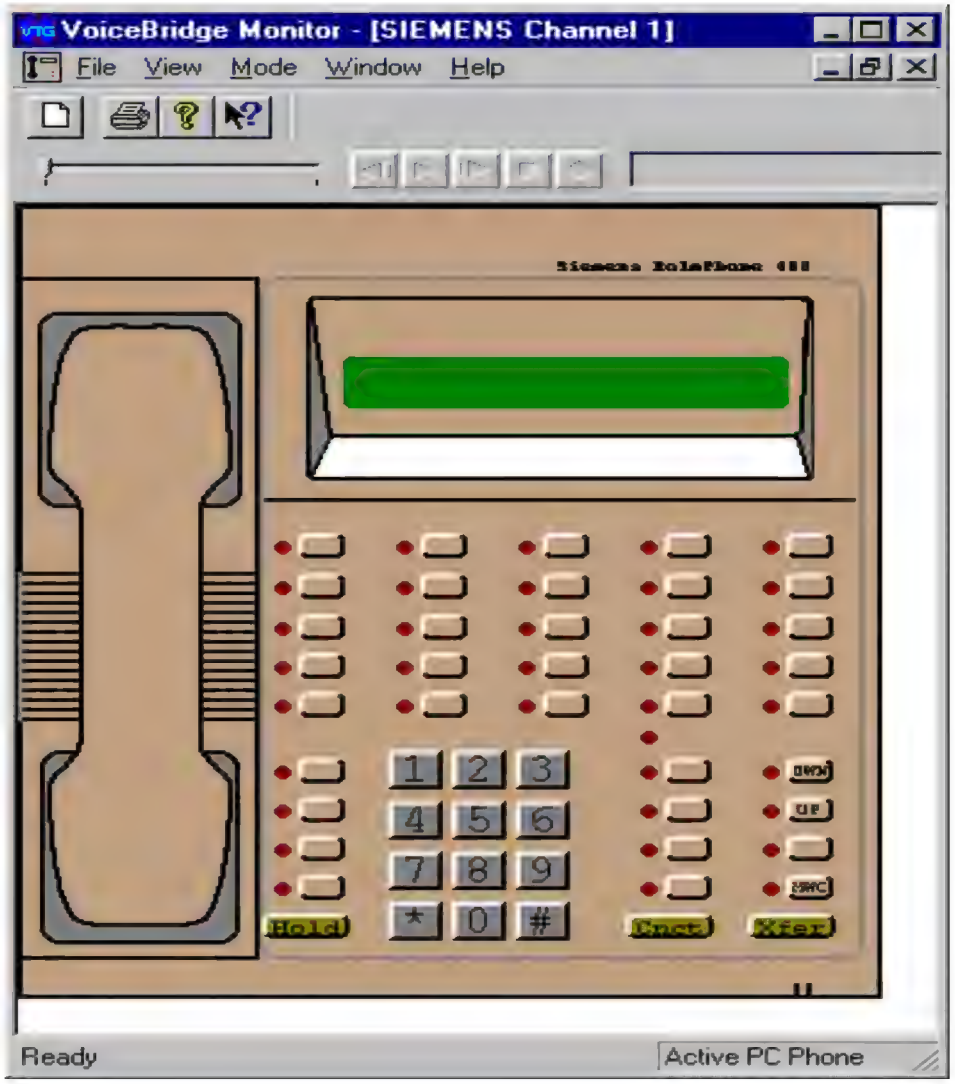
The soft phone is connected to the VoiceBridge 2000 board installed on the CallPilot system and can be considered a physical phoneset. Actions that can be done with a soft phone include

- checking if a carrier exists between the phoneset and the switch
- making a call to the physical phoneset and viewing the phoneset or the DN that is assigned to this CallPilot port
- making a call from a physical phoneset to this soft phone to check if the call shows up on the soft phone
- making a call from a physical phoneset to this phoneset and transferring it to another physical phoneset to see if transfer is possible with CallPilot ports

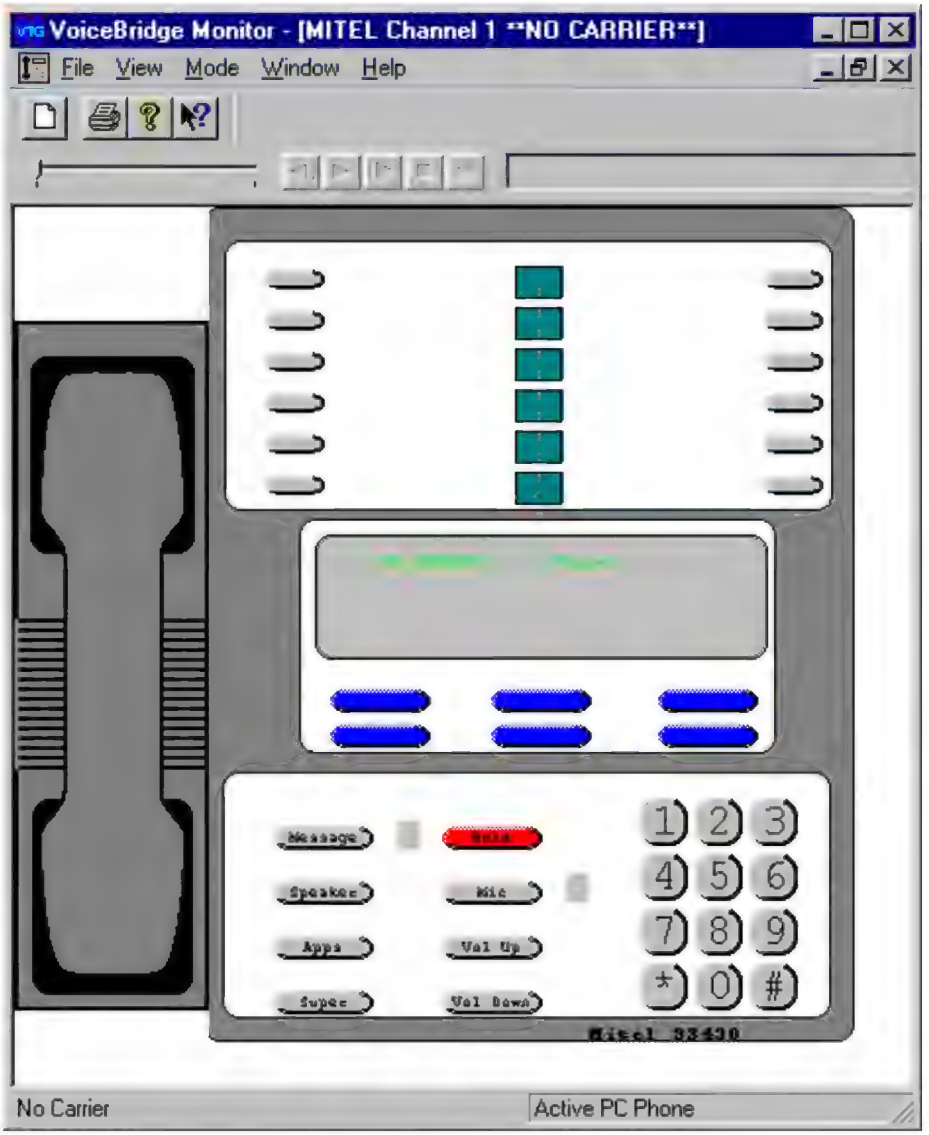
Soft phone displays

The display of the soft phone varies depending on the switch to which the CallPilot server is connected.

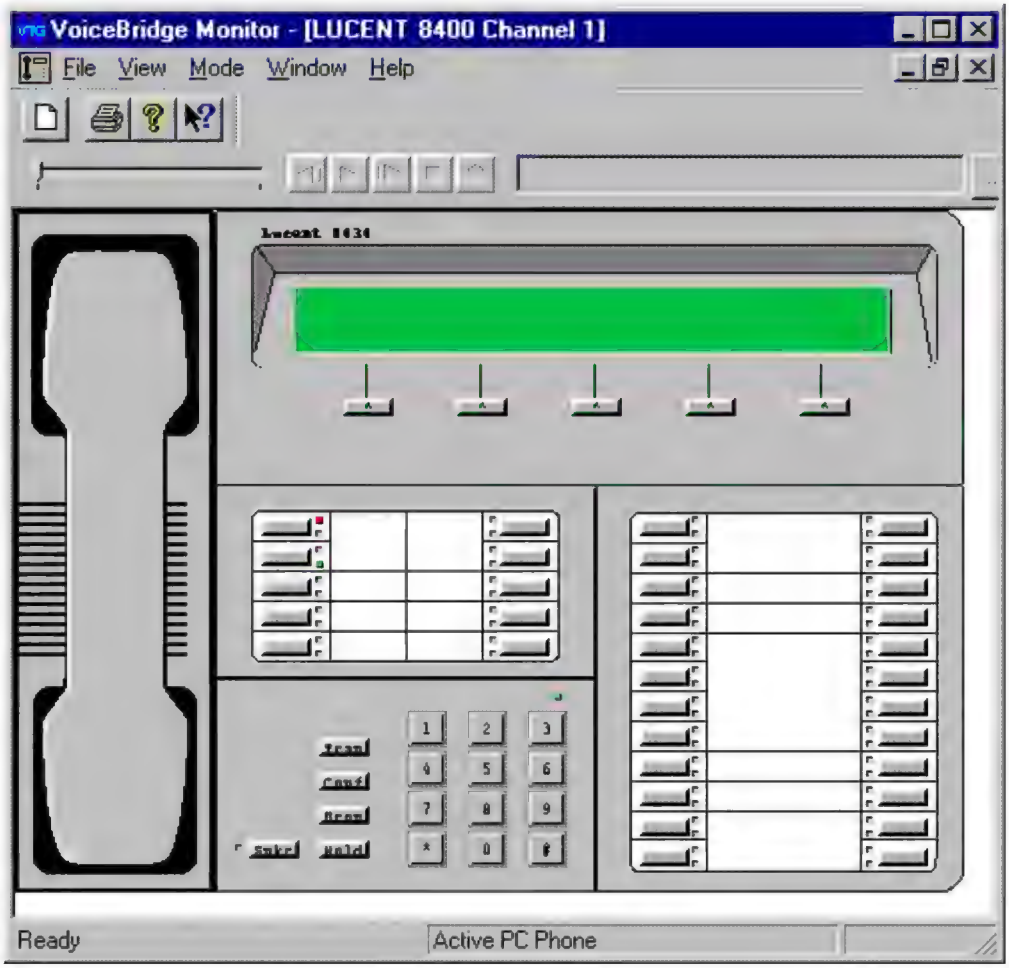
Rolm phone


VoiceBridge Monitor - [SIEMENS Channel 1]
File View Mode Window Help
1 2 3
4 5 6
7 8 9
* 0 #
Hold
Conf
Xfer
Ready
Active PC Phone

Mitel phone


VoiceBridge Monitor - [MITEL Channel 1 **NO CARRIER**]
File View Mode Window Help
Message
Speaker
Mic
Apps
Vol Up
Super
Vol Down
1 2 3
4 5 6
7 8 9
* 0 #
No Carrier
Active PC Phone

Lucent 8400


VoiceBridge Monitor - [LUCENT 8400 Channel 1]
File View Mode Window Help
Lucent 8434
Ready
Active PC Phone

Chapter 6

Performing hardware maintenance

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Section A: Replacing hardware

In this section

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Powering down the server

Introduction

If you need to install, reinstall, or replace hardware components, power down the server, but do not shut down the hub.

CAUTION

Risk of data loss

Exit applications and shut down Windows before powering down the server, or you might lose data or corrupt files.

To power down the server

1. Exit all applications.
2. Shut down Windows.
3. Turn off all peripheral devices connected to the server.
4. Turn off the server using the AC push-button switch on the front panel.
5. The green power light and LCD indicator power off.
6. Unplug the AC power cord from the wall outlet.

DANGER

Risk of electric shock

The AC push-button on/off switch on the front panel *does not* turn off the system AC power. To remove power from the system, you must unplug the AC power cord from the wall outlet or the system.

Disconnecting peripheral cables

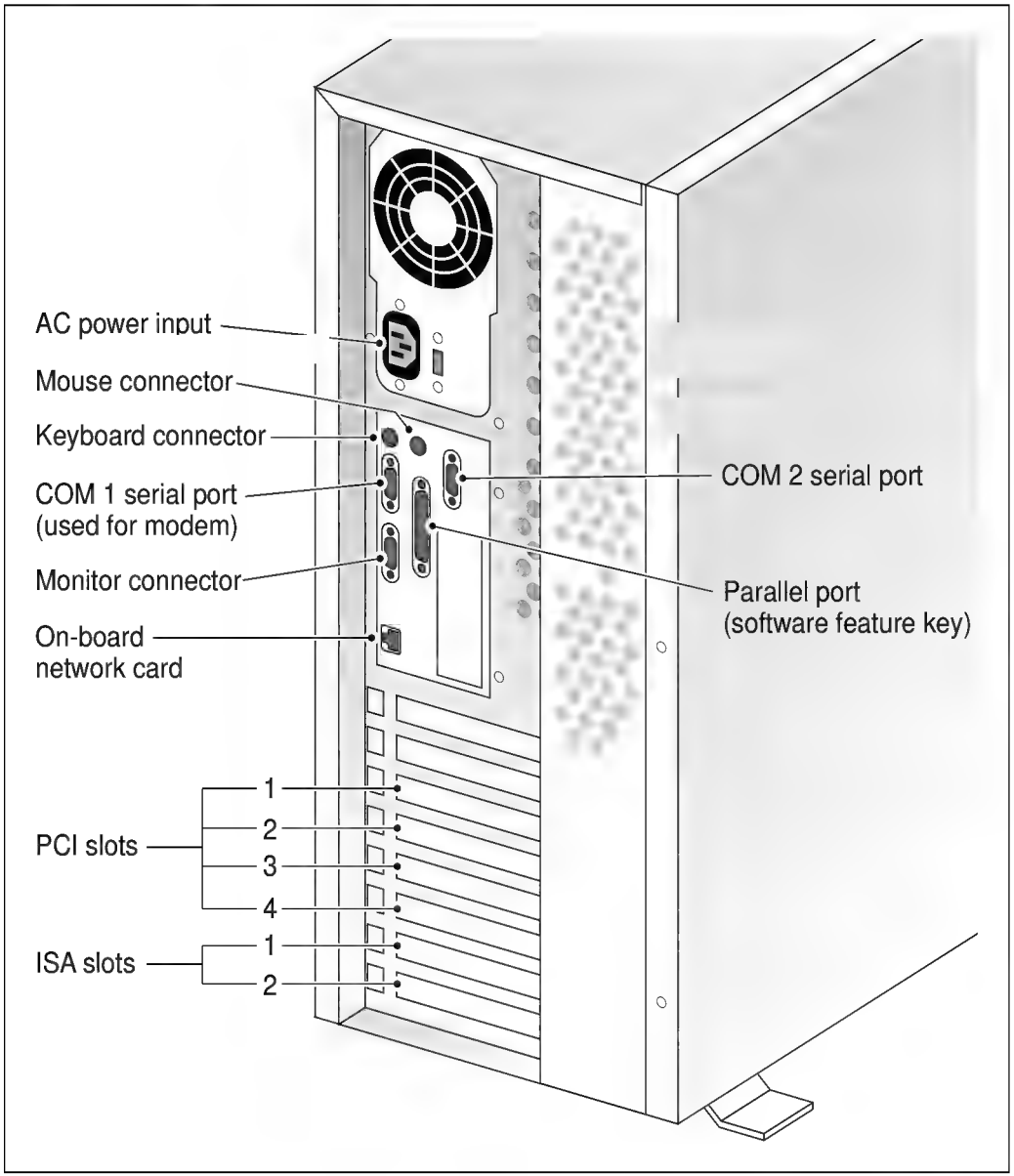
Before you begin

Before you access the server chassis, you must remove all peripheral cables from the server (for example, mouse or keyboard).

To disconnect peripheral cables

Label and disconnect all peripheral cables attached to the I/O panel on the back of the server. For the names of the cables, refer to the following diagram.

Peripheral cable connections



Removing the side cover

To remove the side cover

1. If a padlock is installed on the back of the system, unlock and remove it. Refer to "A" shown in the diagram on page 145.
2. Remove and save the three screws from the back of the side cover. Refer to "B" shown in the diagram on page 145.

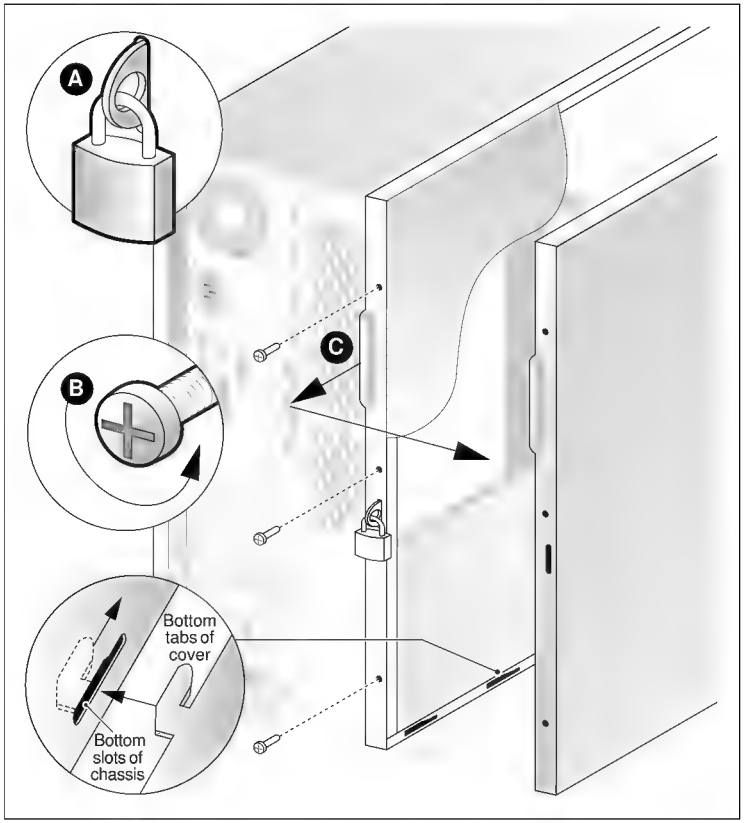
   Note: You need the screws to reattach the side cover.
3. Place the fingertips of your left hand under the built-in handle on the back of the cover.
4. Pull the cover approximately 2.5 cm (one inch) away from the front of the server until it stops. Refer to "C" shown in the diagram on page 145.
5. Use your left hand to pull the back end of the cover toward you to disengage the bottom row of tabs from the notches in the chassis, as shown in the diagram on page 145.
6. Use both hands to lift the cover upward to disengage the top row of tabs from the notches in the top edge of the chassis.
7. Set the cover aside.

WARNING

Risk of personal injury

Do not touch the sharp metal edges of the cover as they might cause personal injury.

Removing the side cover



Replacing the side cover

To replace the side cover

CAUTION

Risk of equipment damage

Ensure that there are no tools or loose parts inside the server chassis before replacing the side cover.

1. Position the cover over the chassis so the top row of tabs aligns with the slots in the top of the chassis.
2. Repeat the action for the bottom row of tabs.
3. Slide the cover toward the front of the system until the cover tabs firmly engage in the chassis.
4. Attach the side cover to the chassis using the three screws you removed earlier, and tighten them firmly.
5. Replace the padlock through the metal loop that protrudes through the slot in the back of the side cover.
6. Connect all external cables and the power cord to the back panel.

Removing the front cover

Before you begin

Before you remove the front panel assembly, disconnect all peripheral devices from the server except the hub, and remove the side panel.

To remove the front cover

1. Remove and save the screw from the front cover.
2. Squeeze the two plastic tabs inside the front cover, and push them in to unlatch the cover from the slots in the chassis.
3. Pull the left side of the cover out slightly, about 15°, until the cover clears the power and reset buttons.
4. Slide the cover to the right until the tabs disengage from the chassis slots.
5. Set the cover aside.

Replacing the front cover

To replace the front cover

1. Insert the metal tabs on the front cover into the slots on the right of the chassis.
2. Align the front panel with the server by lining up the CD-ROM drive with its cutout.
3. Flex and snap the right edge of the panel to insert the four metal tabs into their slots.
4. Squeeze the front panel and chassis together along the left side until the plastic tabs snap into their slots.
5. Reinstall and firmly tighten the screw.

Removing the floppy disk drive

Before you begin

Before you remove the floppy disk drive, power down and unplug the server, and remove the side panel.

To remove the disk drive

1. Disconnect the disk drive's power and signal cables.

   Note: The connectors are usually keyed to allow you to easily reconnect them to the drive. If they are not, insert both cables so that the red wires are closest to the center of the drive.

2. Remove and save the screw securing the drive and carrier assembly to the 5.25 inch drive bay.
3. Slide the assembly back toward the power supply to disengage the tabs from the slots in the bottom of the 5.25 inch drive bay.
4. Remove the assembly from the chassis, and place it component-side up on an antistatic surface.
5. Remove the four screws that hold the bracket to the drive, and set them and the bracket aside.
6. Place the drive in an antistatic protective wrapper.

Replacing the floppy disk drive

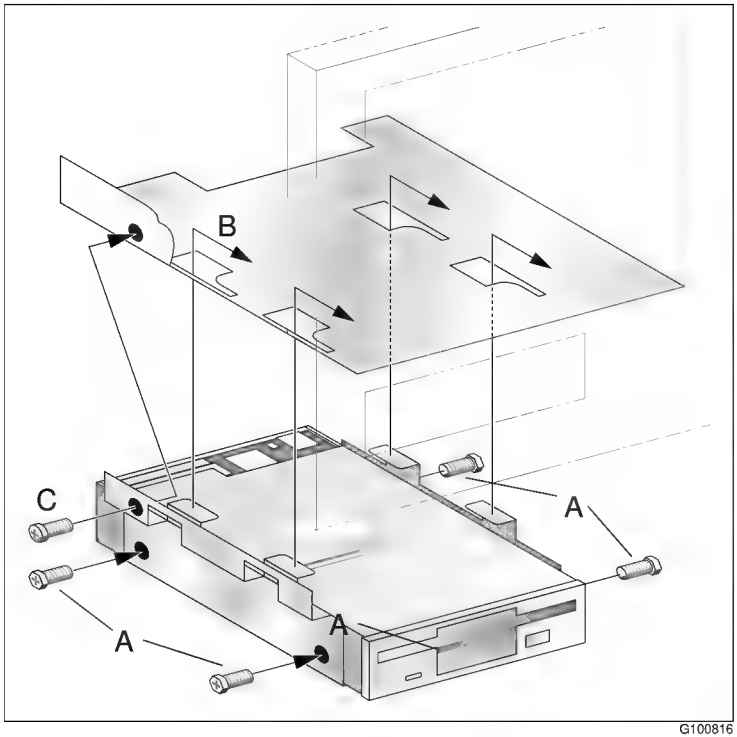
To install the floppy disk drive

1. Remove the disk drive from its protective wrapper, and place it component-side up on an antistatic surface.
2. Record the drive model and serial numbers in your equipment log.
3. Place the drive carrier on the component side of the drive to align the four mounting holes.
4. Attach the brackets to the drive with four screws of the appropriate size and length (reuse the screws you removed before). Tighten the screws firmly. Refer to "A" in the diagram on page 151.
5. Position the drive/bracket assembly under the bottom 5.25 inch bay.
6. Slide the assembly toward the front of the system, and engage the bracket tabs in the slots under the bottom bay. Refer to "B" in the diagram on page 151.

   Note: The bottom of the drive/bracket assembly must accept the tab that sticks out from the inside of the front panel. Make sure that the front of the drive fits flush in the front opening of the system.
7. Secure the assembly to the 5.25 inch bay with the screw you removed earlier. Refer to "C" in the diagram on page 151. Tighten the screw firmly.
8. Connect the signal and power cables to the drive.

   Note: The red stripe on the signal cable must face toward the center of the drive.
9. Reinstall the side cover.

Installing the disk drive



IDE cabling requirements

Introduction

A 45 cm (18 inch) IDE cable that supports two drives is standard in the system. If you install an IDE hard drive, place it in the lowest internal drive bay to make cabling easier, particularly if you also have an IDE device in the externally accessible bay.

If no drives are present on an IDE channel, you must remove the cable.

Disable either IDE controller

If you plan to disable either IDE controller to reuse the interrupt for that controller, you must physically unplug the IDE cable from the board connector (IDE0 or IDE1) if a cable is present. Simply disabling the drive by configuring the SSU option does not free up the interrupt.

- When you have only the IDE CD-ROM installed, you can disable only the secondary PCI IDE controller (since the primary IDE controller runs the CD-ROM), which makes one IRQ available.
- You can disable both the primary and the secondary IDE, if there is a SCSI CD-ROM, which makes two IRQs available (IRQ 14 and IRQ 15).

Preparing to install a mass storage device

Introduction

Three 5.25 inch half-height bays provide space for tape backup, CD-ROM, or other removable media drives.

CAUTION

Risk of electrical damage

The internal SCSI interface in this system supports only single-ended SCSI devices. If you connect differential SCSI drive types to this interface, you can cause electrical damage to the baseboard and peripherals.

Nortel Networks recommends that you do *not* install hard drives in the 5.25 inch bays because

- the drives cannot be properly cooled in this location
- a hard drive generates EMI and is more susceptible to ESD in this location

Filler panels and EMI shields

System EMI integrity and cooling are both protected by drives installed in the bays or by filler panels and EMI shields covering the bays. When installing drives, save the panel and shield to reinstall later, in case you remove the drive and do not reinstall one in the same bay.

Bus termination when installing SCSI devices

Your cabling and connections must meet the SCSI bus specification. Otherwise, the bus can be unreliable, data corruption can occur, or devices might not work. Terminate the SCSI bus at each end of the cable.

To prepare the server for mass storage device installation

1. Remove the side and front system covers and place the front cover on a flat surface.
2. Remove the screws and filler panel from the bay and set them aside.
3. Push the tab on the left side of the EMI metal shield to the right to disengage it from the chassis, and save the shield.

Removing a mass storage device

Before you begin

Before you remove a drive, power down the server and remove the front and side system covers.

To remove the removable media drive

1. Disconnect the drive's power and signal cables.
2. Squeeze the plastic rail tabs toward each other as you carefully slide the drive forward out of the bay.
3. Place the device on an antistatic surface.
4. Remove and save the four screws and two slide rails.
5. If you plan to leave the bay empty, install a filler panel and stainless steel EMI shield on the bay.
6. If you do not replace the device with another SCSI device and it was installed at the end of the SCSI signal cable, modify the cable and termination arrangement so that a proper termination exists at the end of the cable (it can be a termination device only, not necessarily a SCSI peripheral).
7. Replace the system covers.

Installing an add-in board

Introduction

The baseboard has four PCI bus master slots and two ISA bus master slots. The slots accept any add-in PCI and ISA boards. They also accept any add-in board that is compatible with an IBM PC AT or PC XT system (except for an 8-bit drop card that fits only in an 8-bit PC XT connector).

CAUTION

Risk of equipment damage

Install Nortel Networks-authorized expansion cards only.

Add-in boards can be extremely sensitive to ESD and always require careful handling. Before handling add-in boards, wash your hands and leave them slightly damp. Touch a large metal object to ensure that you are not charged.

After removing the board from its protective wrapper or from the baseboard, place it component-side up on a grounded, static-free surface or conductive foam pad if available. Do not slide the board over any surface.

Before you begin

Before you install or remove an add-in board, power down the server and remove the side cover.

To install an add-in board

1 Remove and save the expansion slot screw and cover.

2 Remove the add-in board from its protective wrapper.

Note: Do not touch the components or gold-edge connectors. Place the board component-side up on an antistatic surface.

3 Record the serial number of the add-in board in your equipment log.

4 Set jumpers or switches according to the manufacturer's instructions.

5 Hold the board by its top edge or upper corners. Press it firmly into an expansion slot on the baseboard. Refer to "B" shown in the diagram below.

Note: The tapered foot of the board's retaining bracket must fit into the mating slot in the expansion slot frame. Refer to "C" shown in the diagram below.

CAUTION

Risk of equipment damage

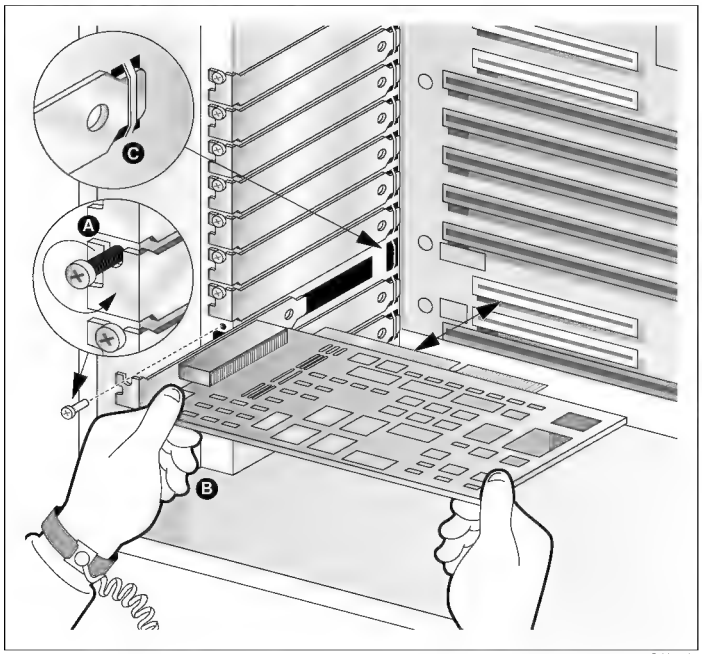
Ensure that the board is completely seated.

6 Align the rounded notch in the retaining bracket with the threaded hole in the frame.

Result: The bracket fits the space that was occupied by the slot cover.

7 Use the screw removed earlier. Insert it into the threaded hole, and push the rounded notch against the screw. Tighten it firmly to prevent the bracket from interfering with adjacent brackets. Attach cables if necessary.

8 Reinstall the side cover.



System configuration utility

If you install an ISA board, you must run the SSU to reconfigure the system to reserve the resources required by that board. Run the SSU to configure any board that you install in a system.

In PCI cards, run SSU to ensure the card's resources are correctly allocated, according to the IRQ tables.

Removing an add-in board

To remove an add-in board

CAUTION

Risk of equipment damage

Install slot covers on all vacant expansion slots. This maintains the electromagnetic emissions characteristics of the system and ensures proper cooling of system components.

1. Label and disconnect any cables attached to the board.
2. Remove the add-in board retaining screw.
3. Hold the board by its upper corners and rock it gently until the edge connectors pull free.
4. Store the board in an antistatic wrapper.
5. Run the System Setup Utility after you change a PCI or ISA board to ensure that the resource assignments are correct.

Removing the fan

Introduction

For cooling and airflow, the system contains two removable chassis fans to cool the boards and removable media drives. The integrated power supply fan provides additional cooling and airflow.

Before you begin

Before you remove the fan, power down the server, detach the power cord, and remove the side cover.

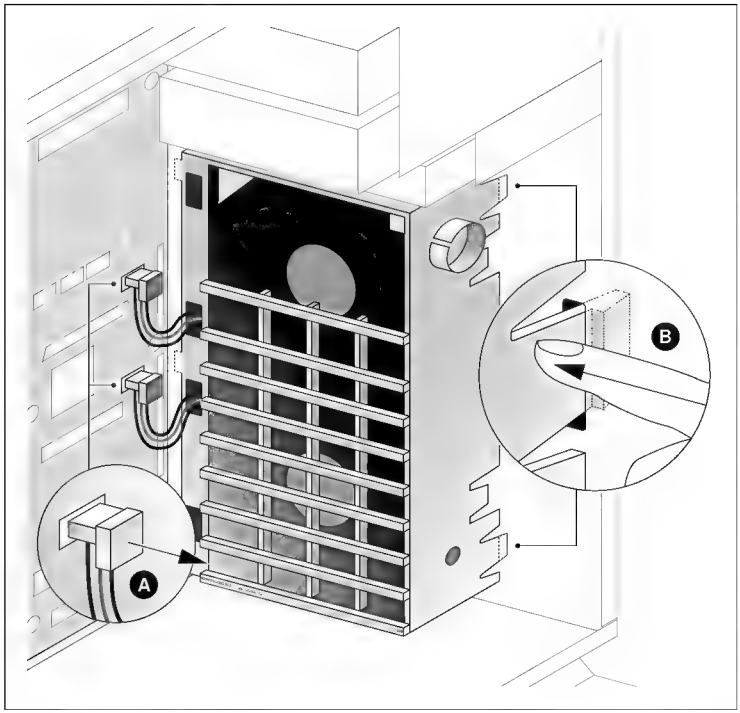
To remove the fan

1. Label and disconnect any cables attached to add-in boards.
2. Remove all add-in boards.

   Note: As you remove a board, label it with its slot number so that you can reinstall the board in the same slot.
3. Disconnect the fan power cable connector(s) from the fan header on the baseboard. Refer to "A" in the diagram on page 161.
4. Remove the plastic "snap-on" fan housing assembly by firmly pressing the plastic tabs on the assembly inward until you can pull the tabs out of the slots in the chassis. Refer to "B" in the diagram on page 161.

   Note: The plastic tabs are actually sections of the housing that were created by cutting slots into the housing. There are three of them.
5. Swing the assembly to the left until you disengage the plastic tabs on the other edge of the assembly from the slots in the chassis. Remove the assembly from the chassis, and place it on a flat surface.
6. Unsnap the fan from the housing by pressing out on the plastic tabs that hold the fan in place. Remove the fan from the housing, and set it aside.

Removing the fan



Replacing the fan

Introduction

Replace a failed fan with the same type as the one removed. For more information about replacing a fan, contact your Nortel Networks customer service representative.

Correct airflow direction

The removable fan pulls air from outside of the chassis so that it flows across the boards and out the back. Orient the fan for the correct airflow direction.

To install the fan

1. Position the cable side of the fan, label-side facing the card guides, over the plastic guide posts in the fan housing.
2. Thread the fan power cable through the two openings on the side of the housing.

   Note: Do not pinch the cable as you snap the fan into the housing.
3. Insert the assembly's inner edge plastic tabs, those near the fan cable, into the slots in the chassis.
4. Carefully swing the assembly to the right until the outer edge tabs on the fan housing snap into the slots in the front of the chassis.
5. Reconnect the fan power cable connector on the baseboard.

   Note: A fan in the bottom of the housing connects to the Fan 1 header. A fan in the top of the housing connects to the Fan 0 header. Orient the cables so that the red wires are closest to the middle of the baseboard.
6. Reinstall the add-in boards.
7. Reconnect any cables to the add-in boards.
8. Reinstall the side and front covers.

Replacing a SCSI drive in the internal bay

Introduction

The internal peripheral bay has space for six drives, each 1 inch high.

You can install 1-inch high peripherals that consume up to 11 W of power and run at a maximum ambient temperature of 50°C in this bay.

The system supports a variety of single-ended SCSI devices. As shipped from your supplier, the system contains at least one 4 Gbyte-wide SCSI hard drive. The wide SCSI cable supplied with the system has connectors for eight devices, and the wide SCSI bus supports only 14 peripheral devices in addition to the host adapter itself on the baseboard.

CAUTION

Risk of equipment damage

The internal SCSI interface in this system supports only single-ended SCSI devices. Use Nortel Networks-authorized drives only.

SCSI drive cabling

If you are installing a SCSI drive, the system includes a standard 68-pin wide (16-bit) SCSI ribbon cable that supports up to eight SCSI devices. The system also includes a wide-to-narrow adapter used to connect the tape drive cable to the 68-pin wide SCSI connector on the baseboard, if required.

Unique SCSI ID

You must assign a unique SCSI ID to the SCSI drive. Use the configuration jumpers on the front of the drive to change the ID of the drive. The SCSI microcontroller on the baseboard is always set to SCSI ID 7.

Active termination of SCSI cables

Hard drives generally provide active termination and termination power. The last two drives in the SCSI channels must provide termination power to the active terminator.

Bus termination for SCSI drives

When you install a SCSI cable, you must provide active SCSI bus termination at the end of the cable. If you leave the cable installed without active termination, this can cause the SCSI bus to be unreliable. You must also ensure that termination is removed or disabled in all other devices on the bus.

The last SCSI device on the cable must be the active bus termination or a separate active termination device.

To remove a SCSI drive from the internal bay

1. Power down the server.
2. Remove the side cover.
3. Disconnect the power and signal cables from the drives in the 3.5 inch bay.
4. Remove and save the three screws holding the bay to the chassis.
5. Swing the bay out to the left of the chassis.
6. Slide the bay upward to disengage its tabs from the chassis.
7. Remove the bay from the chassis, and place it on an antistatic surface.
8. Remove the screws that attach the drive to the bay.
9. Remove the drive from the bay, and place the drive on an antistatic surface.
10. If you removed the drive that was installed at the end of the SCSI cable, ensure that the device that is now the last SCSI device on the cable is properly terminated.
11. To reinstall the internal bay, insert the tabs on the bay into their slots in the chassis. Slide the bay downward until the tabs interlock with the slots.
12. Swing the bay to the right into the chassis.
13. Secure the bay to the chassis with the screws you removed earlier, and tighten the screws firmly.

14 Replace all cabling.

15 Reinstall the side cover.

To install a SCSI drive

1 Disconnect power and signal cables from all drives installed in the bay.

2 Remove and save the three screws holding the bay to the chassis.

3 Swing the bay out to the left of the chassis.

4 Slide the bay upward to disengage its tabs from the chassis.

5 Remove the bay from the chassis, and place it on an antistatic surface.

6 Remove the new drive from its protective wrapper, and place it on an antistatic surface.

7 Record the drive model and serial numbers in your equipment log.

8 Set the SCSI ID by setting any jumpers or switches, referring to Nortel Networks specifications and the drive manufacturer's instructions. See the following tables for jumper settings:

SCSI ID configuration with RAID installed Page 167

Non-RAID SCSI hard drive configuration Page 168

9 To terminate the SCSI bus, do the following steps:

a. If the drive is *not* the last device on the SCSI cable, disable the SCSI termination.

b. If the drive *is* one of the last two drives on the SCSI cable, ensure that the SCSI termination power is enabled.

c. Set the drive parity jumper to Enable Parity.

10 Starting with the space at the top of the bay, position SCSI hard drive 0, component-side facing down, in the bay. Align the screw holes in the drive with those in the bay, and secure the drive to the bay with four screws.

Install the other drives as shown in the following diagram.

11 To reinstall the bay in the chassis, insert the tabs on the bay into their slots in the chassis. Refer to "A" in the following diagram. Slide the bay downward until the tabs interlock with the slots.

12 Swing the bay to the right into the chassis. Refer to “B” in the following diagram.

13 Secure the bay with the screws you removed earlier, and tighten the screws firmly. Refer to “C” in the following diagram.

14 Attach power and signals cables to all drives installed in the bay. Connect the SCSI signal cable to the wide connector on the baseboard or to the RAID controller, as appropriate. See the diagram “To install a SCSI drive” on page 165.

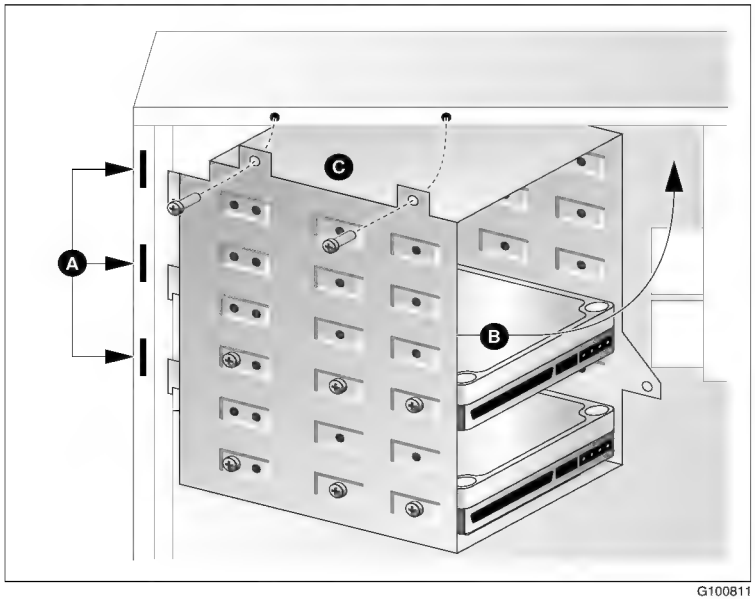
For proper cooling and air flow, neatly fold and secure the excess signal cable so that the cable does not drape across the baseboard or add-in boards. Use a tie wrap or cable clip to tie back the cable.

15 Reinstall the side cover.

16 Run the SCSI Select utility to configure the SCSI hard disk drives installed in the server.

Result: For RAID systems, software configuring is required. Configure non-RAID systems in WINNT before initializing the drives.

Note: Each drive upgrade for a RAID system consists of two physical drives.



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SCSI ID configuration with RAID installed

RAID Channel (Wide)	SCSI ID	Device and recommended disk size	Comments
A (Ch 0)	**0**	First Disk (9 Gbytes)	Should always be located in the top slot of the internal bay area, with drive jumper set to assigned SCSI ID.
	1	Second Disk (9 Gbytes)	Set drive jumper to assigned SCSI ID.
	3	Third Disk (9 Gbytes)	Set drive jumper to assigned SCSI ID.
	7	SCSI Controller	PCI RAID Controller
B (Ch 1)	**4**	Fourth Disk (9 Gbytes)	Should be located in the fourth slot of the internal drive area, with drive jumper set to assigned SCSI ID.
	5	Fifth Disk (9 Gbytes)	Set drive jumper to assigned SCSI ID.
	6	Sixth Disk (9 Gbytes)	Set drive jumper to assigned SCSI ID.
	7	SCSI Controller	PCI RAID Controller

Refer to the figures on pages 195 to 198 for more information.

Non-RAID SCSI hard drive configuration

SCSI ID	Device and recommended disk size	Comments	Drive
0	First Disk (9 Gbytes)	Should always be located in the top slot of the internal bay area. (Wide SCSI distribution)	A0
1	Second Disk (9 Gbytes)	Second bay slot from top.	B0
3	Third Disk (9 Gbytes)	Third bay slot from top.	C0
4	Fourth Disk (9 Gbytes)	Fourth bay slot from top.	D0
5	Fifth Disk (9 Gbytes)	Fifth bay slot from top.	E0
6	Sixth Disk (9 Gbytes)	Sixth bay slot from top.	F0
2	Tape Drive	Narrow SCSI distribution (RAID or Non-RAID)	N/A
7	SCSI Controller	PCI Symbios Controller	N/A

Refer to the figures on pages 195 to 198 for more information.

Replacing baseboard DIMMs

Introduction

The baseboard supports either fast page mode (FPM) dynamic RAM (DRAMs) or extended data out (EDO) 3.3 V 60 ns. DRAM Dual Inline Memory Modules (DIMMs):

- from 8 Mbytes to 512 Mbytes of memory, using up to four single-banked DIMMs
- from 16 Mbytes to 1 Gbyte of memory, using up to four double-banked DIMMs

DIMM sizes and compatibility

Contact your Nortel Networks sales representative or customer support representative for a list of approved, Nortel Networks-qualified DIMMs for the platform you are using.

Before you begin

Before you remove baseboard DIMMs, power down the server and remove the side panel.

CAUTION

Risk of equipment damage

Use extreme care when removing a DIMM. Too much pressure can damage the socket slot. Apply only enough pressure on the plastic ejector levers to release the DIMM.

To remove baseboard DIMMs

1 Gently push the plastic ejector levers out and down to eject a DIMM from its socket.

2 Hold the DIMM only by its edges; be careful not to touch its components or gold-edge connectors. Carefully lift it away from the socket, and store it in an antistatic package.

3 Repeat to remove other DIMMs as necessary.

To install baseboard DIMMs

1 Holding the DIMM only by its edges, remove it from its antistatic package.

2 Orient the DIMM so that the two notches in the bottom edge of the DIMM align with the keyed socket.

CAUTION

Risk of equipment damage and data corruption

Use extreme care when installing a DIMM. Too much pressure can damage the socket. DIMMs are keyed and can be inserted in only one way.

Mixing dissimilar metals can cause later memory failures, resulting in data corruption.

Replacing the CPU

Introduction

The CPU is an Intel Pentium II processor running at up to 450 MHz. The baseboard has two single-edge connectors (SEC) for two Intel Pentium II processors. The CPU can be upgraded in the future.

For Dual CPU Servers

Each release of a processor model is accompanied by a stepping number (or version number).

For 702t servers that are to run with dual processors, the second processor must be within one release (either plus or minus) of the stepping of the installed CPU.

For example, if the installed server is stepping 3, the second CPU must be a stepping 2, 3, or 4 only.

To remove the existing CPU

CAUTION

Risk of equipment damage

Make sure that you are not statically charged by grounding yourself to a large metal object, then to the server itself.

1 Power down the server and remove the side cover.

DANGER

Risk of personal injury

If the system has been running, any installed processor and heat sink on the processor board(s) is hot. To avoid a burn, be careful when removing or installing baseboard components that are located near processors.

2 Pinch the latches at either side of the existing CPU, and press in until they snap into the closed (unlocked) position.

3 Pull the CPU straight out.

To install a CPU

1 Pinch the latches at either side of the existing CPU, and press in until they snap into the closed (unlocked) position.

2 Pull the processor straight out.

3 Remove the new CPU from its protective package.

4 Pull the latches gently out to the open (locked) position.

5 Align the CPU with the SEC on the baseboard.

6 Press the CPU firmly into place until you hear the snap that indicates the processor is in place. The latches automatically click open to hold the CPU locked in place.

Replacing the RAID controller

Introduction

Note: The CallPilot cannot be upgraded in the field from non-RAID to RAID. The RAID controller must be installed in the factory.

Add a Mylex PCI RAID controller (model DAC960) to provide high-performance disk mirroring. It can be configured for a single bus or for two SCSI buses.

CAUTION

Risk of reduced performance

Do not use the software-only approach provided by Windows NT for RAID.

RAID cabling and configuration

After the RAID controller is installed, it must be connected and configured.

To add the RAID controller

1. Power down the server, and unplug the AC power cords.
2. Insert the DAC960 card in PCI Slot 4 (top PCI slot).
3. Connect RAID channel 0 on the controller to the upper drives. See the figures on page 195 – 198.
4. Connect RAID channel 1 on the controller to the lower drives. See the figures on page 195 – 198.

Configuring the RAID system

Introduction

To configure the RAID system, follow these procedures:

1. Create and arrange system packs
2. Specify system drive sizes
3. Initialize the system drive
4. Back up the RAID configuration

Requirements

Before you configure the RAID system, ensure that the file \daccfg\daccf.exe, on configuration disk DAC960 Configuration & Utilities, is dated 08/04/98 (August 4, 1998), or later (version 4.78 or better). Also, ensure that the file \NT\dac960nt.sys, on the Windows NT driver disk (DAC960 Software Kit), is version 4.18.

Note: If your disks are outdated, you must obtain the latest version from your Nortel Networks customer support representative.

CAUTION

Risk of loss of system functionality

You must use the DAC960 Utility and Driver provided by Nortel Networks. Other software can cause a loss of system functionality.

RAID system packs

The following example displays the requirements for configuring and arranging system packs on a RAID system for the server. Based on the system, you might be required to configure two or three system packs.

Note: Both drives A-0 and A-1 provide the termination for the SCSI channels.

System pack	Location of drives in internal drive bays	Physical drive capacity	System pack capacity	SCSI channel	SCSI ID	System pack label
A	Top	4096 Mbytes	8192 Mbytes	0	0	A-0
	Fourth slot from top	4096 Mbytes		1	4	A-1
B	Second slot from top	8192 Mbytes	16384 Mbytes	0	1	B-0
	Fifth slot from top	8192 Mbytes		1	5	B-1
C	Third slot from top	8192 Mbytes	16384 Mbytes	0	3	C-0
	Sixth slot from top (bottom slot)	8192 Mbytes		1	6	C-1

Refer to the figures on pages 195 to 198 for more information.

To create and arrange system packs

1. Insert the bootable DAC960 Configuration & Utilities disk in drive A and power up the computer.

   Result: The DAC960 main menu appears.

2. Select New Configuration, and press Enter.
3. Select Define Pack, and press Enter.
4. Select Create Pack, and press Enter.
5. Select the first device (Channel and SCSI ID) for System Pack A.

   Choose Channel 0 and SCSI ID #0.

   Result: The device is labeled A-0.

6. Select the second device for System Pack A.

   Choose Channel 1 and SCSI ID #4.

   Result: The device is labeled A-1.

7. Press ESC to close this pack.
8. Repeat steps 5 to 7 for System Packs B and C (if applicable). Substitute the appropriate channel and SCSI ID references for the drives. Refer to "RAID system packs" on page 175.
9. Select Arrange Pack, and press Enter.
10. Select a drive from System Pack A (for example, A-0), then press Enter.
11. Repeat step 10 for a drive in System Packs B and C (if applicable).
12. Press Enter to continue.
13. Select Define System Drive, and press Enter.
14. Select Create System Drive, and press Enter.
15. Save the Configuration to a file and copy the file to a floppy disk,

RAID system pack sizing

The RAID system limits the actual capacity of any system pack to the size of the smallest drive in its pack. As drives are replaced, a mirrored set might consist of two drives of different sizes, possibly from different manufacturers. To support the replacement of a failed disk drive with that of another manufacturer, an engineering restriction specifies the size of the system pack.

To continue configuring the RAID system, calculate the drive size as follows:

2 x smallest drive in the pack

For example, if System Pack A has a nominal capacity of 4 Gbytes (2 x 2 Gbytes), enter a system drive size of 4096. Since RAID Level 1 (mirroring) is used, the resulting capacity is half of what you calculated.

The following table specifies the system drive sizes to enter when you configure RAID systems. These sizes apply for currently qualified disk drives and might change in the future.

Qualified disk drive make/model	Physical drive capacity	Size of RAID system drive to specify	Resulting RAID level 1 capacity
Seagate ST32155	2048 Mbytes	4096 Mbytes	2048 Mbytes
Seagate ST32272	2048 Mbytes	4096 Mbytes	2048 Mbytes
Seagate ST34371	4096 Mbytes	8192 Mbytes	4096 Mbytes
Seagate ST34573	4096 Mbytes	8192 Mbytes	4096 Mbytes
Seagate ST39173	8192 Mbytes	16384 Mbytes	8192 Mbytes
Seagate ST39175	8192 Mbytes	16384 Mbytes	8192 Mbytes

Note: The DAC Config software is generic. Ignore trailing letters of the disk drive models.

To specify system drive size

1 On the Create System Drive screen, from the DAC960 Main Menu, select RAID 1, and press Enter.

2 Enter the size of the system drive as specified in "RAID system pack sizing" on page 177, and press Enter.

Result: You are prompted to confirm that you want to create this system drive.

3 Select Yes.

4 Repeat steps 1 to 3 for the remaining packs. When you finish, press Esc to exit to the Create System Drive screen.

5 Press ESC to return to the Define System Drive screen.

6 When prompted, select Yes to save the configuration.

Result: The Main Menu appears.

To initialize the system drive

The initialization of the drives completes the configuration of the RAID system. This takes from one to several hours, depending on the size of the hard disks.

1 From the DAC960 main menu, select Initialize System Drive, and press Enter.

2 Use the arrow keys to select each system drive. Press Enter to toggle your selection.

Result: A check mark indicates a selected drive.

3 Press ESC to return to the previous screen.

Result: The main menu appears.

4 Select Start Initialize, and press Enter.

Result: You are prompted to confirm that you want to initialize this System Drive.

5 Select Yes.

6 When the initialization is complete, press any key to continue.

To back up the RAID configuration

1. Press ESC to go to the daccfg Main Menu.
2. Select Tools from the daccfg Main Menu, and press Enter to display the Tools menu.
3. Select "Backup/Restore conf," and press Enter.

   Result: A cautionary message appears.
4. Press any key to acknowledge the cautionary message.

   Result: The system displays the Backup and Restore Configuration submenu.
5. Select "Backup Configuration," then press Enter.

   Result: The system displays the "Enter File Name" pop-up window.
6. Type **a:** and the name of the backup file (for example, **a:\raidback**), then press Enter.

CAUTION

Risk of data loss

You must save this file to drive A on a floppy disk; otherwise, you might not be able to restore the RAID configuration if the RAID card fails.

Ensure the floppy disk is stored in a safe and accessible location.

Result: The system displays a warning, `Existing file, if any will be overwritten.`

7. Enter Yes.

   Result: The RAID configuration is backed up on the floppy disk. A message displays when the backup has been successfully completed.
8. Press ESC to return to the Main Menu.

Rebuilding a hard disk in RAID

Introduction

In RAID level 1, two equal-capacity disks mirror one another. Both drives run simultaneously with one disk serving as the backup copy of the other disk. If one drive fails, the other continues to run. When the failed drive is physically replaced with a new one, the data on the operating drive of the system pack must be copied onto the new drive to rebuild it. RAID automatically performs this rebuild process when the replacement drive is accessed.

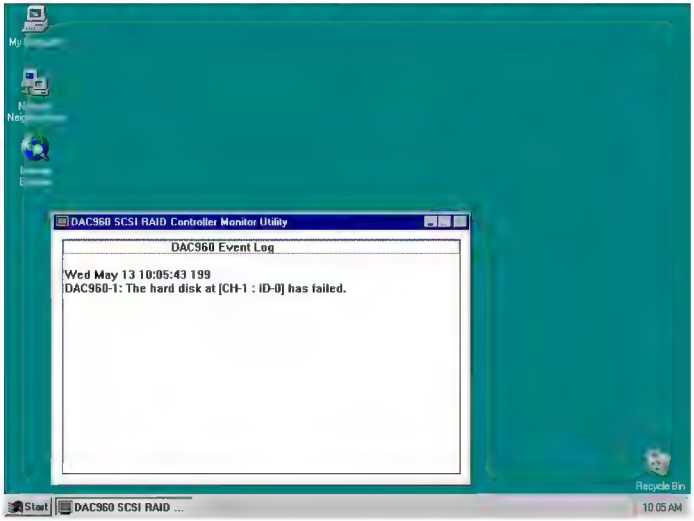
If you would like to start the initiation process sooner, or monitor the rebuilding process, use the the DAC Administration software that is installed on the system.

Before you begin

Perform this procedure in response to the system message that a hard disk has failed. The message displays information about drive location. Perform this procedure while the system is powered on.

To rebuild a hard disk in a RAID system

1 Observe the warning message given by the DAC Monitor software that indicates a hard drive failure.


DAC960 SCSI RAID Controller Monitor Utility
DAC960 Event Log
Wed May 13 10:05:43 199
DAC960-1: The hard disk at [CH-1 : ID-0] has failed.
Recycle Bin
Start
DAC960 SCSI RAID ...
10:05 AM

2 Record the SCSI channel SCSI ID of the drive that failed from the information in the DAC Monitor window.

3 Identify which drive drive failed using this information and referring to the tables contained on page 175.

4 Shutdown Windows NT and power down the server.

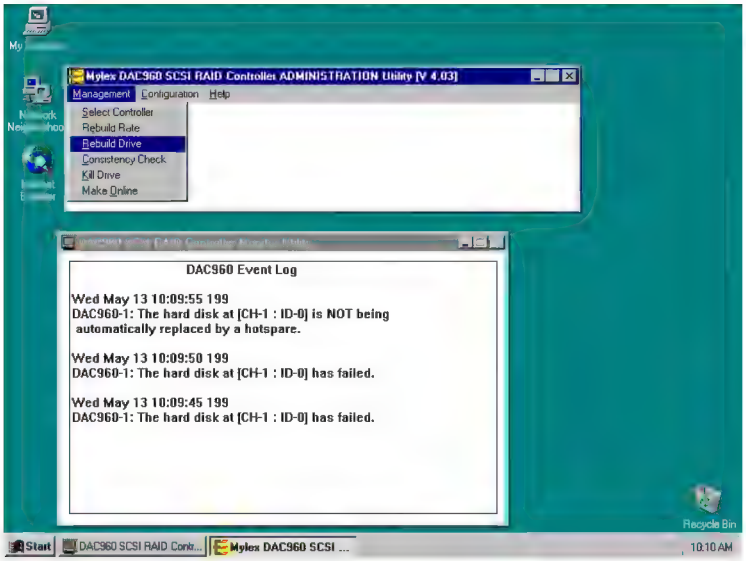
5 Remove the failed hard disk.

6 Replace with a new hard disk.

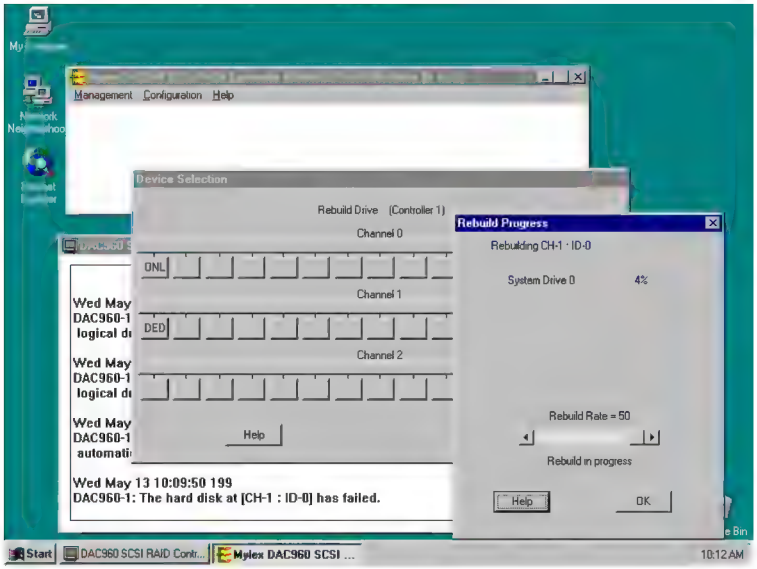
7 Power up the server and logon to Windows NT.

8 Click on the DAC Administration icon.

9 Choose Rebuild Drive from the Management menu.

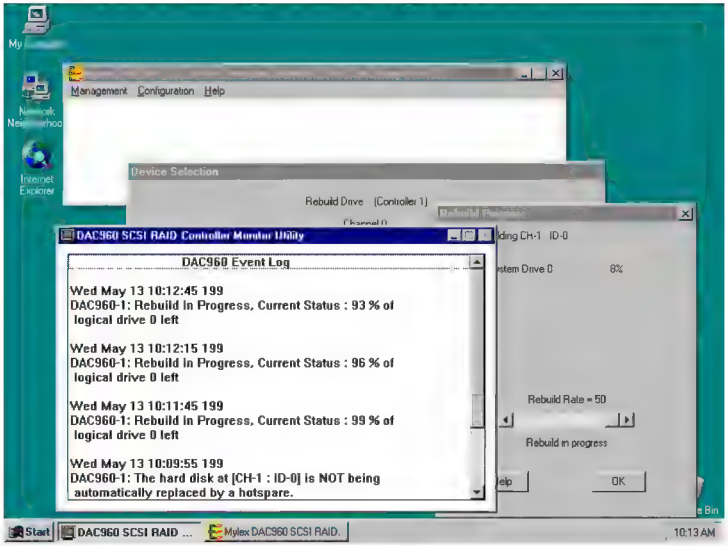

Mylex DAC960 SCSI RAID Controller ADMINISTRATION Utility [V 4.03]
Management Configuration Help
Select Controller
Rebuild Rate
Rebuild Drive
Consistency Check
Kill Drive
Make Online
DAC960 Event Log
Wed May 13 10:09:55 199
DAC960-1: The hard disk at [CH-1 : ID-0] is NOT being automatically replaced by a hotspare.
Wed May 13 10:09:50 199
DAC960-1: The hard disk at [CH-1 : ID-0] has failed.
Wed May 13 10:09:45 199
DAC960-1: The hard disk at [CH-1 : ID-0] has failed.
Recycle Bin
Start
DAC960 SCSI RAID Contr...
Mylex DAC960 SCSI ...
10:10 AM

10 Click the drive marked DED.



11 When the rebuild completes, click OK.

Note: This procedure takes up to one hour, depending on the size of the drive (an average of 4 Gbytes in 20 minutes).


Management Configuration Help
Device Selection
Rebuild Drive (Controller 1)
DAC960 SCSI RAID Controller Monitor Utility
DAC960 Event Log
Wed May 13 10:12:45 199
DAC960-1: Rebuild in Progress, Current Status : 93 % of
logical drive 0 left
Wed May 13 10:12:15 199
DAC960-1: Rebuild in Progress, Current Status : 96 % of
logical drive 0 left
Wed May 13 10:11:45 199
DAC960-1: Rebuild in Progress, Current Status : 99 % of
logical drive 0 left
Wed May 13 10:09:55 199
DAC960-1: The hard disk at [CH-1 : ID-0] is NOT being
automatically replaced by a hotspare.
Rebuild Rate = 50
Rebuild in progress
OK
Start
DAC960 SCSI RAID ...
Mylex DAC960 SCSI RAID.
10:13 AM

12 After the procedure is complete, close the application.

Replacing Ethernet CLAN cards

Introduction

The 702t server can only use a PCI Ethernet card.

To replace Ethernet cards

1. Power down the server.
2. Unplug the AC power cord.
3. Remove the chassis cover.
4. To make access to the internal components easier, turn the server over on its side.
5. Locate the CLAN Ethernet card to be removed, and unplug its network cabling.
6. Remove the screw that fastens the card in the chassis.
7. Gently pull the card out (use a slight rocking motion).
8. Remove the new Ethernet card from its protective packaging.

   Note: Place the old Ethernet card into the protective packaging.
9. Line up the new Ethernet card with the slot (PCI or ISA, as appropriate).

   Note: Make sure the end-plate tab is lined up with the opening in the chassis.
10. Press the card into the slot.

CAUTION

Risk of equipment damage

Ensure that the card is completely seated or it will short-circuit.

11. Secure the card to the server chassis with the fastening screw.
12. Stand the server up and replace the chassis covers.
13. Plug in the AC power cord.

14 Power up the server.

15 Remove the old network card driver if appropriate.

16 Install the network adapter software.

17 Optimize the binding order.

Replacing the PCI Token Ring card

Introduction

The system uses a PCI bus Token Ring adapter for CLAN connectivity.

To replace the PCI Token Ring card

1. Power down the server.
2. Unplug the AC power cord.
3. Remove the chassis covers.
4. To make access to the internal components easier, turn the server over on its side.
5. Locate the PCI Token Ring card to be removed, and unplug its network cabling.
6. Remove the screw that fastens the card in the chassis.
7. Gently pull the card out (use a slight rocking motion).
8. Remove the new PCI Token Ring card from its protective packaging.

   Note: Place the old PCI Token Ring card into the protective packaging.
9. Line up the new PCI Token Ring card with the PCI slot.

   Note: Make sure the end-plate tab is lined up with the opening in the chassis.
10. Press the card into the slot.

CAUTION

Risk of equipment damage

Ensure that the card is completely seated or it will short-circuit.

11. Secure the card to the server chassis with the fastening screw.
12. Stand the server up, and replace the chassis covers.
13. Plug in the AC power cord.

14 Power up the server.

15 Install the network adapter software.

16 Optimize the binding order.

Section B: Expanding hardware

In this section

Powering down the server 190
Disconnecting peripheral cables 191
Configuring the SCSI subsystem 192
Connecting the IDE CD-ROM 199
Configuring SCSI devices 200
Installing the CLAN network card 204

Powering down the server

Introduction

If you need to install, reinstall, or replace hardware components, power down the server.

CAUTION

Risk of data loss

Exit applications and shut down Windows before powering down the server, or you might lose data or corrupt files.

To power down the server

1. Exit all applications.
2. Shut down Windows.
3. Turn off all peripheral devices connected to the server.
4. Turn off the server using the AC push-button switch on the front panel.
5. The green power light and LCD indicator power off.
6. Unplug the AC power cord from the wall outlet.

DANGER

Risk of electric shock

The AC push-button on/off switch on the front panel *does not* turn off the system AC power. To remove power from the system, you must unplug the AC power cord from the wall outlet or the system.

Disconnecting peripheral cables

Introduction

Before you access the server chassis, you must remove all peripheral cables from the server (for example, mouse or keyboard).

To disconnect peripheral cables

Label and disconnect all peripheral cables attached to the I/O panel on the back of the server.

Configuring the SCSI subsystem

Hard disk subsystem configuration

A 702t platform can be configured as either a RAID or non-RAID server. The configurations offer differing capacities of 4 Gbyte and 9 Gbyte hard drives.

Getting started

The process of configuring the SCSI subsystem includes the following procedures:

1. Connecting the IDE CD-ROM
   This procedure applies to both RAID and non-RAID systems.
2. Configuring SCSI devices
   Steps relevant to RAID and non-RAID systems are included in this procedure.
3. Configuring the RAID system
   A series of four procedures explains the steps for configuring the RAID system.

Cabling and termination

The following figures illustrate the cabling and termination of the SCSI devices in the system. SCSI devices include hard disks and optional disk drives.

Note: The tape drive MUST be installed using only one narrow-to-wide adapter in its cabling chain. Also, unless there is no other option, the tape drive must be connected to a SCSI bus other than the SCSI bus being used for the disk drives. If possible, the tape drive must use the same connector and cable type when connecting it to the baseboard.

For example, if the tape drive has a narrow connector, please use a narrow-to-narrow cable. If the tape drive has a wide SCSI connector, use a wide-to-wide cable. If necessary, you must use one narrow-to-wide adapter.

Tape drive settings

Settings for the tape drive must be set to the following values:

1. Tape drive terminator is added to end of tape drive SCSI channel, as outlined in the diagrams "Cabling for a RAID system with IDE CD-ROM and SCSI tape drive" on page 196, and "Cabling for a non-RAID system with CD-ROM and tape drive" on page 198.
2. SCSI ID is set to 2.
3. Parity must be enabled.
4. Termination power must be enabled. (TPWR)
5. Termination is disabled.

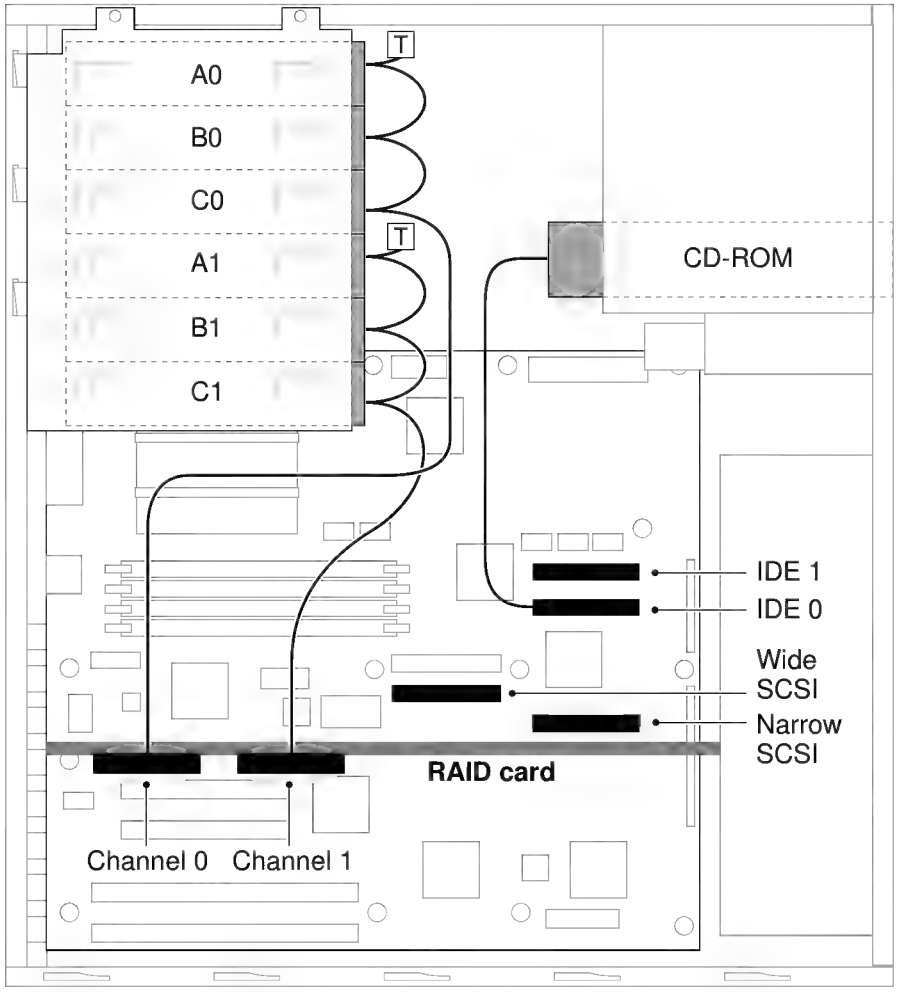
The tape drive requires an active SCSI terminator to terminate its SCSI bus, on both the system's wide and narrow SCSI controller, as illustrated in the following diagrams. The appropriate active terminator is required, as follows:

- Wide Active Terminator (A0766997)

- Narrow Active Terminator (A0767002)

- Narrow to wide adapter

Cabling for a RAID system with IDE CD-ROM



Note 1: A "T" indicates an active wide terminator.
Note 2: The CD-ROM is connected to the IDE 0 (PRI IDE).

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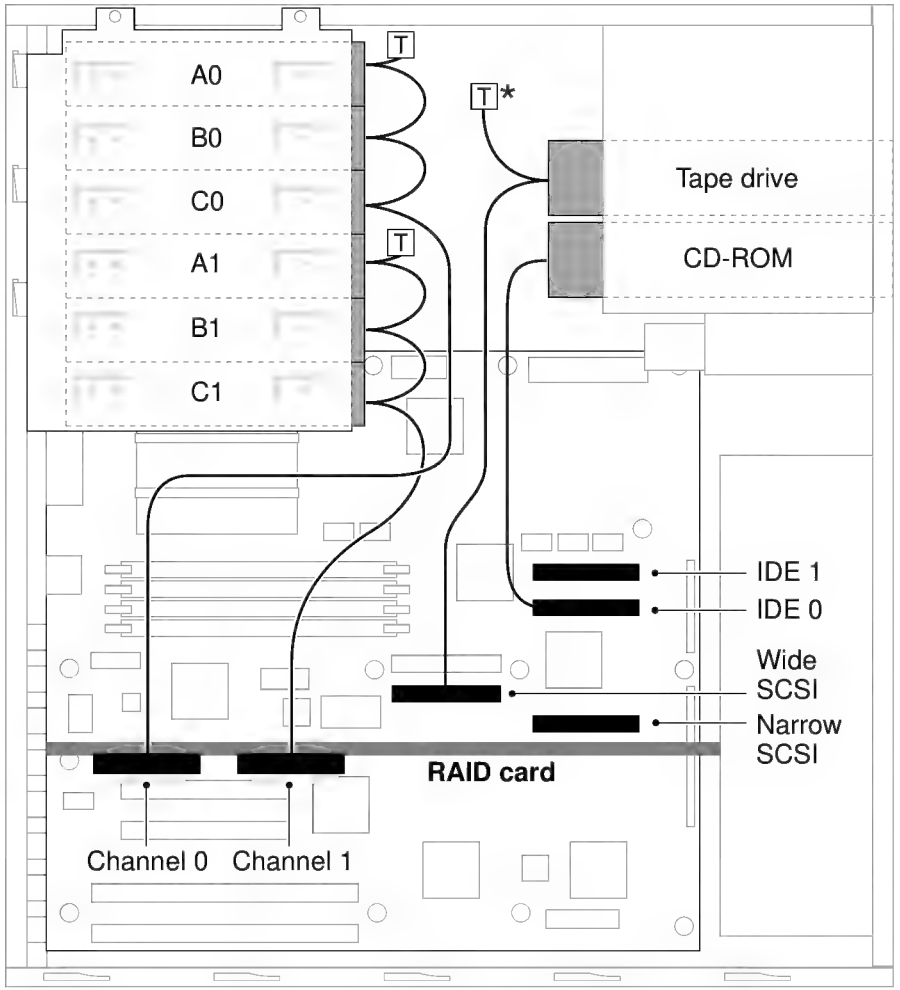
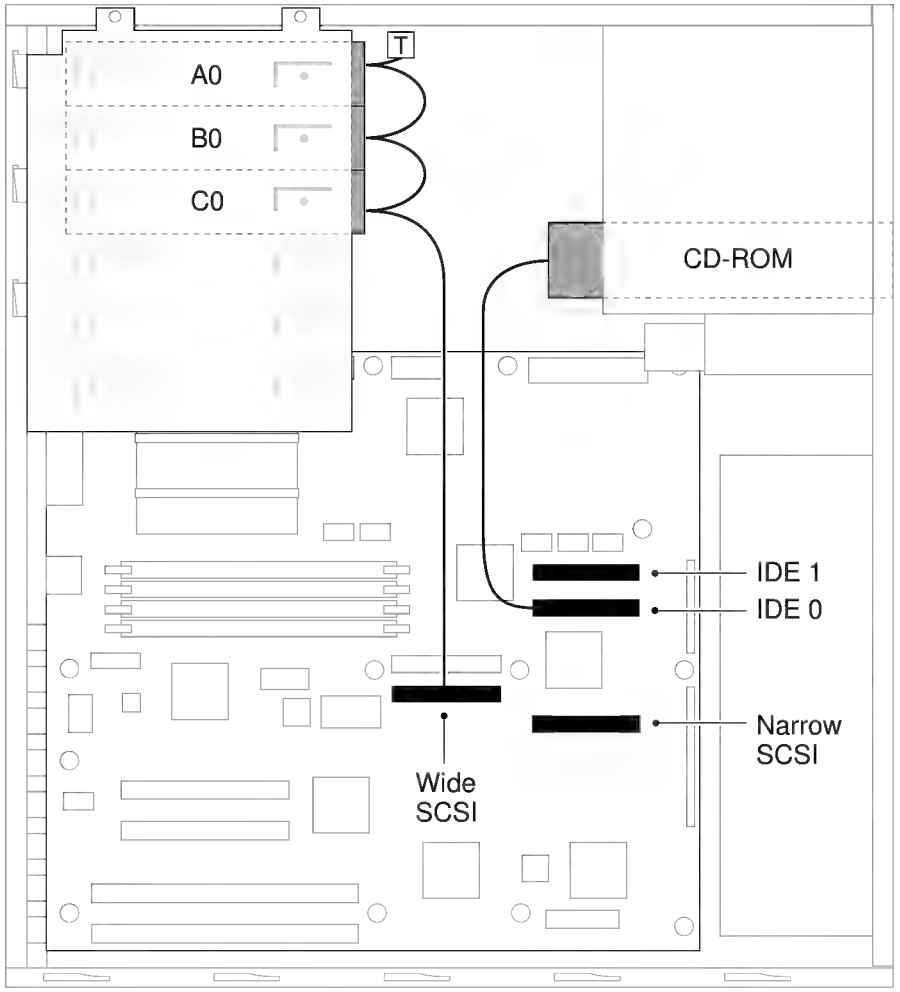
Cabling for a RAID system with IDE CD-ROM and SCSI tape drive



Note 1: A "T" indicates a wide active terminator.
Note 2: *A wide SCSI active terminator (A0766997) must be the last device on the SCSI bus.
Note 3: The CD-ROM is connected to IDE 0.

Cabling for a non-RAID system with CD-ROM



Note 1: A "T" indicates an active wide terminator.
Note 2: The CD-ROM is connected to IDE 0

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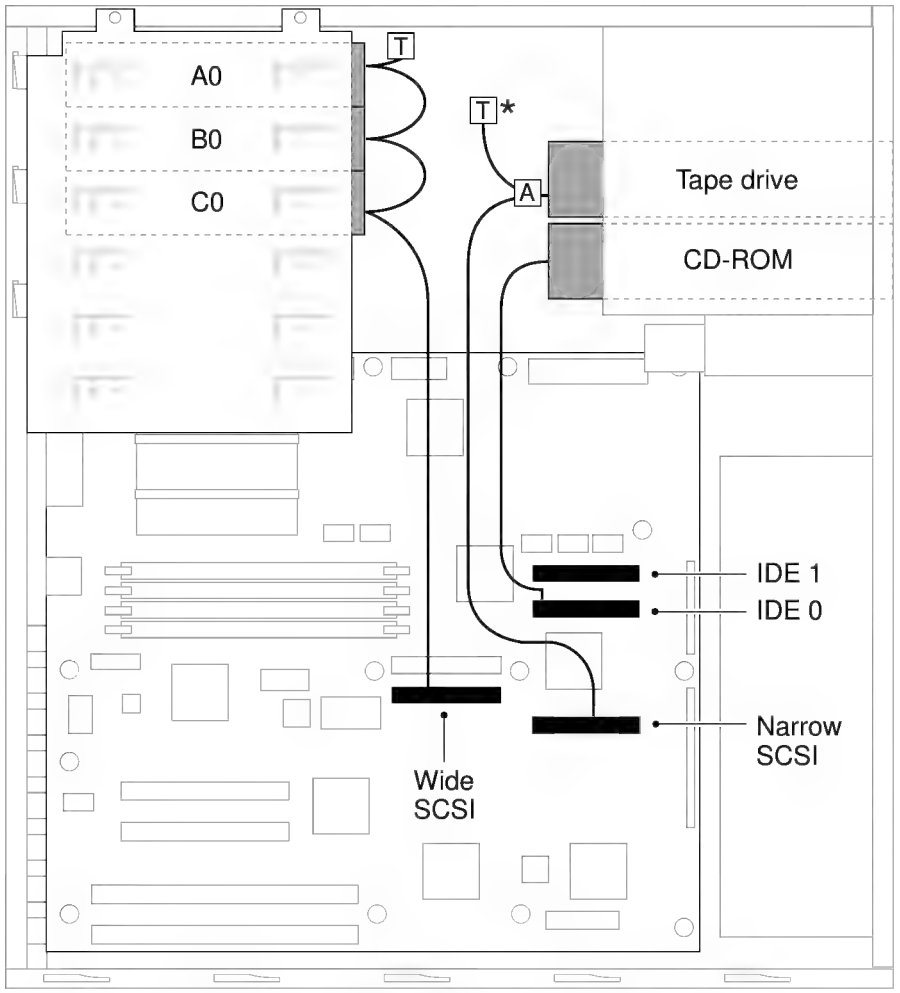
Cabling for a non-RAID system with CD-ROM and tape drive



Note 1: A "T" indicates an active terminator.
Note 2: *A narrow SCSI active terminator (A0767002) must be the last device on the SCSI bus.
Note 3: An "A" indicates a narrow to wide adapter.
Note 4: The CD-ROM is connected to IDE 0.

Connecting the IDE CD-ROM

Introduction

The CD-ROM is an IDE device that is not part of the SCSI chain.

To connect the IDE CD-ROM

1. Remove the side cover. Refer to "Cabling for a RAID system with IDE CD-ROM" on page 195 and "Cabling for a non-RAID system with CD-ROM and tape drive" on page 198 for the proper connections.
2. Set the CD-ROM jumper settings to indicate "Master/Single."

   Note: Refer to the CD-ROM drive manufacturer's documentation for specific jumper settings.
3. Connect the CD-ROM to the Primary IDE (IDE 0) interface on the baseboard.

Configuring SCSI devices

Introduction

See the figures on page 195 and page 197.

Hard drives are connected to a wide SCSI bus, or the wide SCSI channels on the RAID controller.

SCSI termination

RAID systems

The last two disk drives on each of the SCSI cables should have termination power applied to the SCSI bus, and also to internal terminators. Terminators on the disks themselves should be disabled. Wide SCSI active terminators should be used to terminate these SCSI buses at the very end of the SCSI cable.

Refer to the diagrams, "Cabling for a RAID system with IDE CD-ROM" on page 195 and "Cabling for a RAID system with IDE CD-ROM and SCSI tape drive" on page 196. Refer to the manufacturer's manual for specific disk drive settings.

Non-RAID systems

Hard disks should be cabled to the on-board wide SCSI controller using a wide SCSI cable. The last two disk drives on the SCSI cable must have termination power applied to the SCSI bus and to the internal terminators. Terminators on the disks should be disabled. A wide SCSI active terminator should be used to terminate this SCSI bus at the very end of the cable.

Tape drives

For all Meridian Application Servers, the NTRH9036 tape drive must have an active SCSI terminator as the last device on the SCSI cable, as this tape drive is incapable of providing SCSI bus termination. You will need to purchase an appropriate active terminator as specified below:

- Wide Active Terminator (Part Number A0766997)
- Narrow Active Terminator (Part Number A0767002)

If the tape drive is on a wide SCSI cable, ensure the jumper labeled TPWR (or "Termination Power to the SCSI bus") is enabled on the tape drive, and that the tape drive is attached to the second last connector on the SCSI cable. Attach a wide SCSI active terminator to the last connector at the very end of the SCSI cable.

If the tape drive is on a narrow SCSI cable, ensure the jumper labeled TPWR (or "Termination Power to the SCSI bus") is enabled on the tape drive, and that the tape drive is attached to the second last connector on the SCSI cable. Attach a narrow SCSI active terminator to the last connector on the SCSI cable.

One end of the SCSI bus is terminated on the baseboard with active terminators that are permanently enabled. The other end(s) of the SCSI bus(es) must be terminated using one of the active terminators.

SCSI Parity

Parity is always enabled in any, and all, SCSI devices.

SCSI IDs

Each SCSI device on a SCSI bus must have a unique SCSI ID. IDs for narrow (8-bit) SCSI devices must be in the range from 0–7. IDs for wide (16-bit) SCSI devices also include the range from 8–15. Typically, an ID of 7 is used by the host adapter.

Note: To minimize potential problems, the boot drive (A-0) must have SCSI ID 0, and the tape drive must have SCSI ID 2. Hard drive jumpers must be set so that the disk drives use the IDs 0, 1, 3, 4, 5, and 6, as shown at the end of the following procedure.

If it is not clear from the disk drive manufacturer's documentation how to set disk drive jumpers for SCSI ID and bus termination, call your Nortel Networks customer support representative.

To configure SCSI devices

Disk drives

1 To configure the drives in specific systems, do the following steps:

a. In RAID systems:

Drives labeled A0, B0, and C0 terminate on channel 0 of the SCSI RAID card. Set the SCSI ID for A0 to 0, B0 to 1, and C0 to 3. Drives labeled A1, B1, and C1 terminate on channel 1 of the SCSI RAID card. Set the SCSI ID for A1 to 4, B1 to 5, and C1 to 6.

b. In non-RAID systems:

Drives labeled A0, B0, and C0 terminate on the wide SCSI connector on the baseboard. Set the SCSI ID for A0 to 0, B0 to 1, and C0 to 3. The last two disk drives on the SCSI cable must have termination power applied to the SCSI Bus, and also to internal terminators. Disable terminators on the disks. Use a wide SCSI active terminator to terminate this SCSI bus at the very end of the cable.

Refer to the diagrams on "Cabling for a non-RAID system with CD-ROM" on page 197 and "Cabling for a non-RAID system with CD-ROM and tape drive" on page 198.

c. For all other drives:

Disable Termination and use the following SCSI IDs:

Drive	SCSI ID
A0	0
B0	1
C0	3
A1	4
B1	5
C1	6

Refer to the manufacturer's manual for specific disk drive jumper settings.

Tape drive

1 Remove the side cover to expose the drive bays. Refer to the diagram "Cabling for a RAID system with IDE CD-ROM and SCSI tape drive" on page 196 or "Cabling for a non-RAID system with CD-ROM and tape drive" on page 198 for the location of the drive bays.

2 Set the SCSI ID on the tape drive to 2.

3 Set the tape drive parity checking to Enabled.

Note: You might have to move or insert a jumper. Refer to the manufacturer's manual for specific jumper settings.

4 Remove the SCSI Termination from the tape drive if it is installed.

Note: Do not set the jumper for applying termination power to the bus. Refer to the manufacturer's manual for specific tape drive jumper settings.

5 Using either a narrow or wide SCSI cable, depending on your system configuration, connect the tape drive to the on-board SCSI controller not used by the hard disks. Refer to the diagrams on pages 195 to 198 for the exact cabling.

Note: Use a wide (68-pin) to narrow (50-pin) SCSI connector that is shipped with the system, if required.

Installing the CLAN network card

Introduction

The server has a built-in Ethernet network controller—the ELAN (embedded LAN) controller. You must install a secondary controller for the CLAN (customer LAN).

To install the CLAN network card

1 Power down the server.

2 Install the CLAN card.

- If the card is PCI, install it in the appropriate PCI slot.

Section C: Adding and replacing switch-specific boards and cards

In this chapter

Replacing MPB16 boards 206
Adding a VoiceBridge 2000 card 214
Replacing the VoiceBridge 2000 card 216
Replacing the DTI/480SC board 218

Replacing MPB16 boards

Introduction

This section describes how to replace MPB16-4, MPB16-2T boards, and MPC-8 cards.

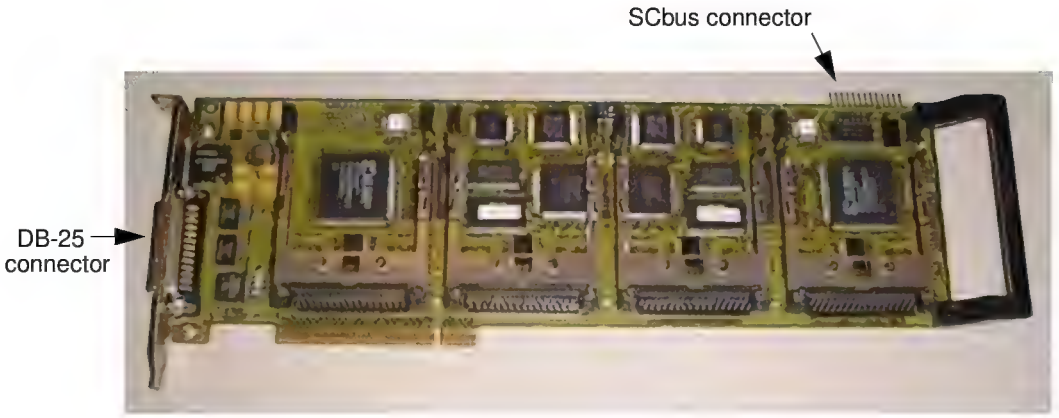
Parts to install

The MPB16 board comes in two different versions.

- MPB16-4 (for the Meridian 1, MSL-100/DMS-100, Lucent, Mitel and Rolm switches)
- MPB16-2T (for the Matra switches)

MPB16-4 (NTRH20BA)

There are four slots available on the MPB16-4 (NTRH20BA) to hold four MPC-8 cards.



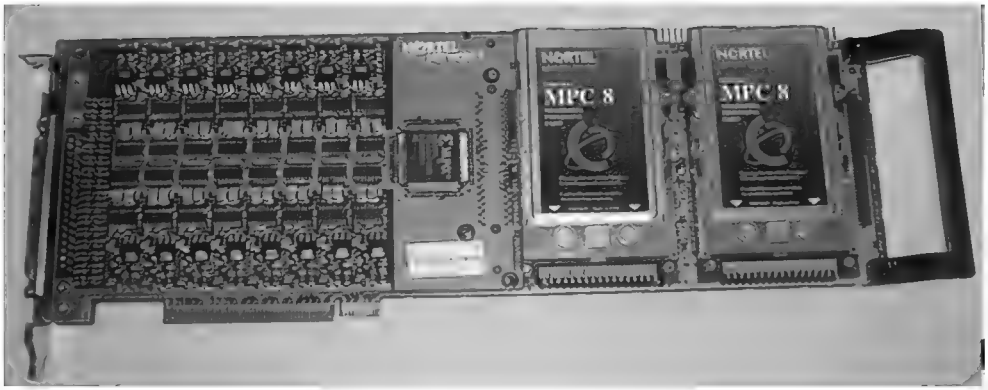
There is also a DB-25 pin digital connector.

MPB16-2T (NTRH21CA) board

The MPB16-2T/LS*16 is a PCI form-factor card that includes two bays to hold MPC-8 DSP cards.

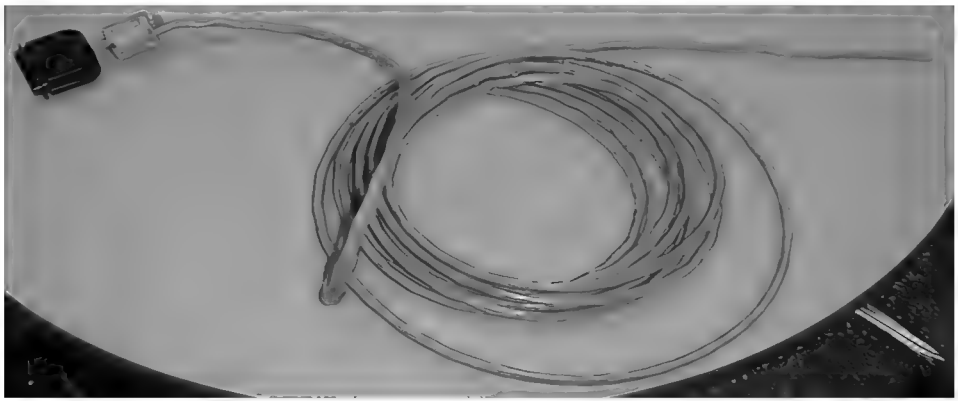
Note: The MPB16-2T/LS*16 will be referred to as the MPB16-2T for the remainder of this document.

Below is a picture of the MPB16-2T with analog mezzanine and two MPC-8 cards installed.



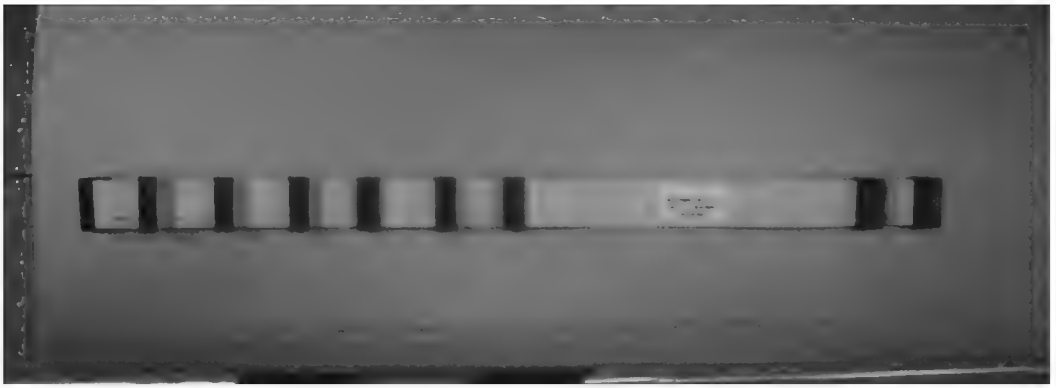
Analog loop start cable (NTRH0914)

The following photograph shows the 10 m (32.8 ft) NTRH0914 analog loop start cable. The DB37 end connects at the back of the server to the MPB16-2T. The other end of the cable must be stripped and connected to a bix block servicing the Matra switch.



CT-Bus cable (NTRH0915)

The CT-Bus ribbon cable is used to series two MPB16-2T cards in a single server. The connectors are keyed to optimize correct installation.



MPC-8 card (NTRH01AA)

The MPC-8 is a credit-card-sized PC-card that plugs into all MPB16-2Ts. The MPC-8 provides multimedia expansion to the MPB16-2T. Below is a picture of an MPC-8.

Maximum number of MPC-8s per server

The server supports up to a maximum of two fully loaded MPB16 boards, which provides 96 channels (or 64 channels if the MPB16-2T board is used), as shown on the following table.

	Maximum multimedia channels	**Optional MPC-8s**
One MPB16-4	48 (16 of which are built into the MPB16-4 board)	4 (provides up to 32 additional channels)
Two MPB16-4s	96 (32 of which are built into the two MPB16-4 boards—16 channels per board)	8 (provides up to 64 additional channels)
One MPB16-2T	32 (16 of which are built into the MPB16-4 board)	2 (provides up to 16 additional channels)
Two MPB16-2Ts	64 (32 of which are built into the two MPB16-4 boards—16 channels per board)	4 (provides up to 32 additional channels)

Maximum number of MPB16-2Ts per server

The server supports up to a maximum of two fully loaded MPB16-2Ts, which provide 32 channels each for a maximum of 64 channels, as shown in the following table.

	Embedded multimedia channels	Optional MPC-8s
One MPB16-2T	16	2 (provides up to 16 additional channels)
Two MPB16-2Ts	32	4 (provides up to 32 additional channels)

Installing the MPC-8 cards

CAUTION

Risk of electrical damage

Wear an antistatic ESD wrist strap when handling multimedia processing boards and cables.

ATTENTION MPC-8 cards are not hot-pluggable. Power down your server before installing the cards.

1 Slide the MPC-8 into any available bay on the MPB16 with the label side up.

2 Press the MPC-8 gently into the bay until you feel the card slide firmly into place. If the card is placed upside down, it will not slide completely into the bay.

Note: To simplify the installation, install the MPC-8 into the MPB16 prior to installing the MPB16 in the server.

Installing the MPB16-2T board

DANGER

Risk of electrical shock

Disconnect the AC power and remove the AC power cord from the host product.

1 Disconnect the CT-Bus cable from the existing MPB16-2T board.

2 Remove the existing MPB16-2T from its slot in the backplane. Retain the screw to reuse when installing the new board.

3 Press the MPB16-2T firmly into its slot in the backplane.

Note: Take care to slide the MPB16-2Tcarefully past the protective foil strips, as they are easily damaged.

4 Secure the board at the rear of the server using the same screw you removed earlier.

5 If are installing a second MPB16-2T, repeat steps 2 and 3.

6 If you have two MPB16-2T's installed in the server, use the CT-Bus cable to connect the two boards. This cable is keyed; do not force the cable onto the card connectors.

7 Replace the server cover.

Note: Be careful not to pinch any cabling when sliding the server cover back on.

8 Connect the NTRH0914 loop start cable from the MPB16-2T to the Matra switch. This cable connects to the punch-down panel servicing the Matra switch.

9 Run the Configuration Wizard to detect the new hardware.

10 The MPB16 installation is complete.

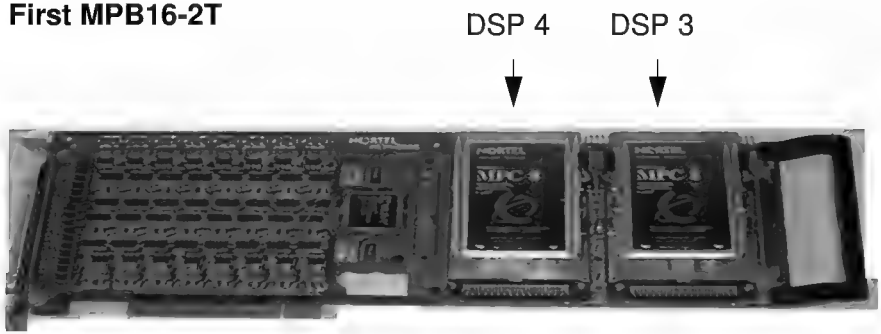
DSP numbering

Use the following table as a guide for DSP numbering with multiple MPB16-2T cards.

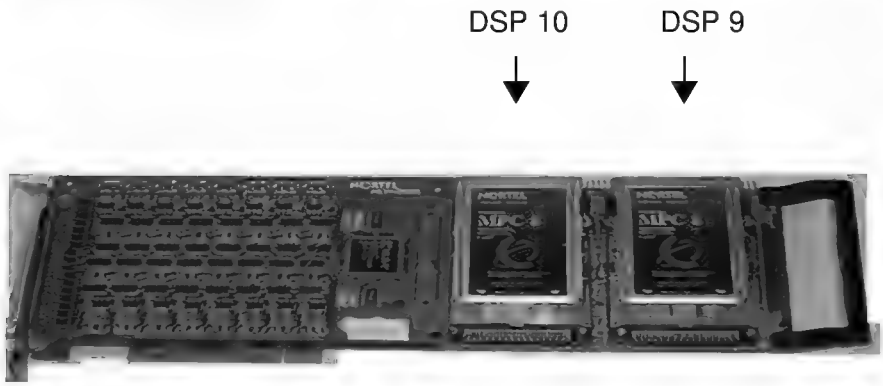
MPB16-2T board	DSP assignments
First MPB16-2T	1 and 2 = embedded 3 and 4 = MPC-8
Second MPB16-2T	7 and 8 = embedded 9 and 10 = MPC-8

MPC-8 cards are counted from the handle side of the MPB16-2T, as shown in the following photographs.

First MPB16-2T



Second MPB16-2T



Installing the MPB16-4 boards

DANGER

Risk of electrical shock

Disconnect the AC power and remove the AC power cord from the host product.

1 Disconnect the SC-Bus cable from the existing MPB16-4 board.

2 Remove the existing MPB16-4 from its slot in the backplane. Retain the screw to reuse when installing the new board.

3 Press the MPB16-4 firmly into its slot in the backplane.

Note: Take care to slide the MPB16-4 carefully past the protective foil strips, as they are easily damaged.

4 Secure the board at the rear of the server using the same screw you removed earlier.

5 If you are installing a second MPB16-4, repeat steps 2 and 3.

6 Replace the server cover.

Note: Be careful not to pinch any cabling when sliding the server cover back on.

7 Run the Configuration Wizard to detect the new hardware.

Result: The MPB16 installation is complete.

Adding a VoiceBridge 2000 card

Introduction

This section describes how to add a VoiceBridge 2000 Digital PBX/CBX integration card (also referred to as the VB2000 card). This card is installed in the server and supports connection to a Lucent, Mitel, or Rolm switch.

Types of VoiceBridge 2000 cards

Switch	VB2000 card model	Part number
Lucent 2-wire port type Lucent Definity Generic 3	VB-2009	NTRH9060
Mitel SX-200D, SX-200 Light, SX-2000 Light, SX-2000 S, SX-2000 VS	VB-2007	NTRH9059
Rolm 8000 CBX, 9000 CBX, 9751 CBX	VB-2002	NTRH9057

Note: These cards are identical in external appearance, and the procedures for installing and configuring them are the same.

The 1001rp can have a maximum of two VoiceBridge 2000 boards installed. The first board should be installed in ISA slot 1, and the new board in ISA slot 2. Refer to the picture on page 143 for the location of the ISA slots.

To install the VoiceBridge 2000 card

1 Shut down Windows NT and power down the server.

2 Remove the chasis cover.

3 Write down the serial number of the new VoiceBridge 2000 board.

4 Remove the screw holding on the cover of the ISA slot and remove the cover.

5 Insert the VoiceBridge 2000 board and secure it with the screw.

6 Connect the SCbus cable so that it interconnects both of the VoiceBridge boards and the MPB16-4 board.

7 Replace the chassis cover.

8 Connect the external cable to the PBX connector on the back of the VoiceBridge 2000 board.

9 Power on the server.

10 Boot the SSU.

11 Define the new VoiceBridge 2000 board.

12 Assign the appropriate IRQ.

13 Save and exit from the SSU.

14 Restart the server and log on to Windows NT.

15 Run the VTG Configuration application (d:\nortel\bin\vtgconfiguration.exe).

16 Click ADD.

Result: The Add Board dialog box appears.

17 Enter the serial number of the new VTG board and click OK.

18 Click Close.

Result: The VTG Configuration closes.

19 Run the Configuration Wizard to reconfigure the VTG channel configuration.

Result: The VoiceBridge 2000 card installation is complete.

Replacing the VoiceBridge 2000 card

Introduction

This section describes how to replace the VoiceBridge 2000 Digital PBX/CBX integration card (also referred to as the VB2000 card). This card is installed in the server and supports connection to a Lucent, Mitel, or Rolm switch.

Types of VoiceBridge 2000 cards

Switch	VB2000 card model	Part number
Lucent 2-wire port type Lucent Definity Generic 3	VB-2009	NTRH9060
Mitel SX-200D, SX-200 Light, SX-2000 Light, SX-2000 S, SX-2000 VS	VB-2007	NTRH9059
Rolm 8000 CBX, 9000 CBX, 9751 CBX	VB-2002	NTRH9057

Note: These cards are identical in external appearance, and the procedures for installing and configuring them are the same.

To install the VoiceBridge 2000 card

1. Disconnect the external cable from the VoiceBridge2000 card.
2. Remove the chassis cover.
3. Disconnect the internal SCbus cable from the VoiceBridge2000 card.
4. Remove the existing VoiceBridge 2000 card from its ISA slot.
5. Remove the new VoiceBridge 2000 card from its ESD bag.

6 Write down the VoiceBridge 2000 card serial number, which is printed on the backplate of the card, and the slot number. The serial number is shown as "S/N: xxxxx."

7 Insert the VoiceBridge 2000 card into the ISA slot. The PBX connector should be positioned in the open slot in the backplane.

8 Replace and tighten the retaining screw to secure the board.

9 Repeat steps 4 to 8 for each VoiceBridge 2000 card.

10 The SCbus cable consists of two connectors at one end (intended for the MPB16-4s), a large gap with no connectors, and then seven connectors at the other end (intended for the VoiceBridge 2000 cards).

Use the SCbus cable to connect the MPB16-4 and VoiceBridge 2000 cards.

11 Put the cover back on the server.

Note: Be careful not to pinch the SCbus cable when sliding the server cover back on.

12 Power on the server and log on to Windows NT.

13 Run the VTG Configuration application (d:\nortel\bin\vtgconfiguration.exe).

14 Select the serial number of the board that was removed and click Delete.

15 Click ADD.

Result: The Add Board dialog box appears.

16 Enter the serial number of the new VTG board and click OK.

17 Click Close.

Result: The VTG Configuration closes.

18 Run the Configuration Wizard to reconfigure the VTG channel configuration.

Result: The VoiceBridge 2000 card installation is complete.

Replacing the DTI/480SC board

Introduction

This section describes how to replace the DTI/480SC board. The DTI/480SC board provides a T1 network interface to the switch.

Switch settings

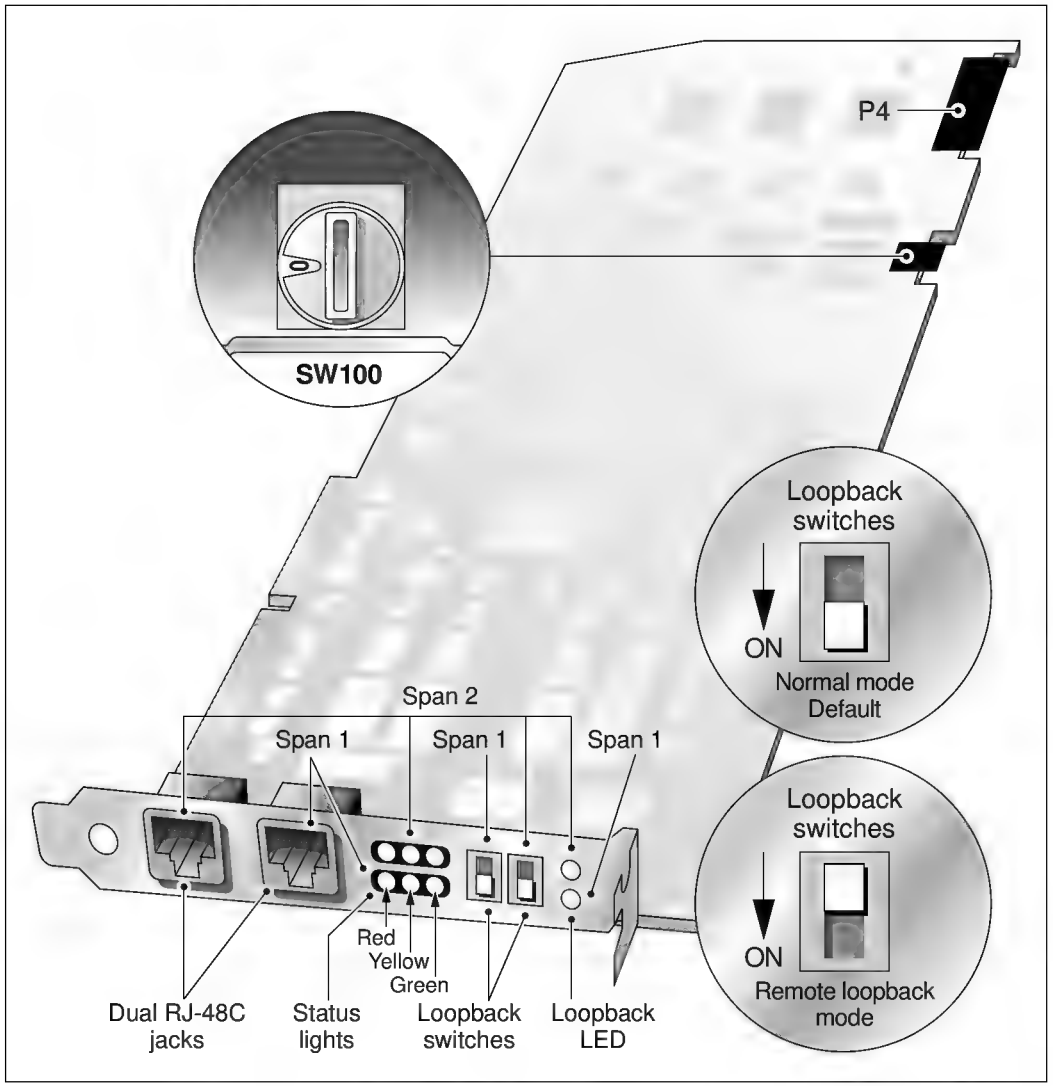
- Board locator switch (SW100)

Switch SW100 is used to assign the unique board locator ID. The installation procedure instructs you to assign a unique board locator ID to each board.

- Remote Loopback Switch

The loopback switch is factory set to ON for normal mode. You can move the loopback switch to the OFF position for loopback mode as part of troubleshooting a system problem.

DTI/480SC board–switch locations



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Installing the DTI/480SC boards

1 Remove the existing DTI/480SC from its ISA slot in the backplane. Retain the screw to reuse when installing the new board.

2 Remove a DTI/480SC board from its ESD bag.

3 On the board, dial the rotary switch (SW100) to select a number. Set the first board to 0, the second to 1, and so on.

The switch has hexadecimal numbers ranging from 0 to F inclusive. See "DTI/480SC board–switch locations" on page 219.

4 Ensure that the loopback switch is in the ON (down) position. See "DTI/480SC board–switch locations" on page 219.

5 Use the slot's board guides as you insert the board edge connector into the slot. Press firmly until the board is securely seated in the slot.

6 Replace and tighten the retaining screw to secure the board.

7 Repeat steps 1 to 6 for each DTI/480SC board you are installing.

8 Use the SCbus cable to connect the MPB16-4 and DTI/480SC boards. See "DTI/480SC board–switch locations" on page 219 for the location of the P4 connector.

The SCbus cable consists of two connectors at one end (intended for the MPB16-4s), a large gap with no connectors, and then seven connectors at the other end (intended for the DTI/480SC boards).

9 Put the cover back on the server.

Note: Be careful not to pinch the SCbus cable when sliding the server cover back on.

10 Run the Configuration Wizard to detect the new hardware.

Result: The board installation is complete.

Section D: Upgrading and using the SSU and BIOS

In this section

Overview	222
Backing up the BIOS and SSU upgrade disks	223
Recovering the BIOS	224
Crisis recovery	226
Upgrading and configuring the BIOS	228
SSU overview	231
Configuring your system using SSU	233

Overview

Introduction

BIOS defines the compatibility of your PC with expansion hardware. Each BIOS has a corresponding SSU release. The proper SSU floppy disk is identified by the Intel software version number.

All systems configured by Nortel Networks manufacturing are shipped with at least the minimum vintage BIOS and corresponding SSU. However, new BIOS might be issued to fix discovered bugs or to support new hardware standards and options.

Minimum vintage

If the SSU/BIOS firmware does not meet minimum vintage requirements, it must be updated.

To determine BIOS vintage

1 Power on the server.

2 Read the BIOS version on the display.

BIOS and SSU releases

The following are tested and supported releases of BIOS and SSU for the server:

Server	Intel SSU/ Release	Intel BIOS Release	When to use
702t	3.0	12.0	No upgrade required if already at this release.

Backing up the BIOS and SSU upgrade disks

Introduction

Because the SSU software holds server configuration for individual systems, make a backup copy of the BIOS and SSU upgrade software.

Before you begin

Before you can back up the BIOS/SSU upgrade, you must have the BIOS and SSU upgrade software on a floppy disk.

You also need two blank floppy disks for the backup copies.

To backup the BIOS and SSU

1. Write-protect the BIOS upgrade floppy disk.
2. Insert the BIOS upgrade floppy disk into drive A.
3. Type **diskcopy a: b: /V** and press Enter.
4. When prompted to insert the destination disk, insert a blank floppy disk, and press Enter.

   Note: If prompted to insert the source disk, insert the original upgrade disk.
5. When prompted, "`Copy another disk (Y/N)?`", type **N**.
6. Remove the disk from the disk drive.
7. Label the backup copy with the information on the original disk.
8. Repeat the procedure for the SSU upgrade.

Recovering the BIOS

Flash memory description

Flash memory contains a protected area that, in most cases, cannot be corrupted. Code in this area starts the server from drive A when the BIOS is corrupted. BIOS corruption is generally detected by the POST diagnostics at system startup.

BIOS recovery description

The recovery procedure automatically loads flash memory from the BIOS files on the BIOS recovery disk.

To recover the BIOS

1. Insert the BIOS recovery disk in drive A.

   Note: The disk is shipped with the server. Call your Nortel Networks customer support representative if you need a disk.

2. Power up the server.
3. Type option **1**, then press Enter.

   Result: The BIOS is updated, and the server will restart.

4. Power down the server, and remove the power cord from the system for 60 seconds.
5. Remove the server side cover.
6. Move the CMOS Clear jumper (J3J2) to the Erase position (from pins 1-2 to pins 2-3).

   Result: This replaces the contents of the NVRAM with the manufacturing default settings.

7. Restart the system.

   Result: The system displays a message that the CMOS area has been cleared when the operation is complete.

8. Power down the server.

9 Move the CMOS Clear jumper to the Protect position (from pins 2-3 to pins 1-2).

Result: This protects the contents of the NVRAM.

10 Replace the side cover.

11 Power up the server.

12 Reconfigure the system with SSU, as outlined in "Configuring your system using SSU" on page 233.

Crisis recovery

To recover from a corrupted CMOS

If the system behaves abnormally (for example, it does not start up or it freezes during the startup process), the CMOS might be corrupted. To correct this, follow these steps:

1. Power down the server.
2. Remove the server cover and access the motherboard.
3. Move the J3J2 jumper to pins 2 and 3 (by default the jumper is set to pins 1 and 2).
4. Power up the server.

   Result: A message stating that the CMOS has been cleared displays.
5. Power down the server.
6. Reset the J3J2 jumper to pins 1 and 2.
7. Replace the server cover.
8. Power up the server.
9. The CMOS setup must be performed. Refer to "Upgrading and configuring the BIOS" on page 228 for more information.

To recover from a corrupted BIOS

In situations of a corrupt BIOS or an unsuccessful BIOS update, the 702t server can boot in recovery mode. To boot in recovery mode, follow these steps:

1. Power down the server.
2. Remove the server cover and access the mainboard.
3. Move the boot option jumper J3J2 (pins 9-11) into the recovery boot position (pins 10-11). The jumper connects pins 9 and 10 by default (normal BIOS).

   Note: Recovery mode requires a memory DIMM module in the first socket.
4. Insert the Nortel Network's 702t BIOS disk in drive A.

5 Power up the server.

Note: During this process, video is not initialized.

Result: A high-pitched beep tone announces the start of the recovery process. The entire process takes from two to four minutes.

A successful update ends with two high-pitched beep tones.

A failed update is indicated by a long series of short beep tones. This indicates that some of the BIOS files might be corrupted.

6 After a successful update, power down the server.

7 Move the recovery jumper back to pins 9 and 10.

8 Power up the server.

9 Verify that the BIOS version matches the version that was updated.

Note: The CMOS is not cleared when the system BIOS is updated.

Upgrading and configuring the BIOS

BIOS update availability

Obtain BIOS upgrades from your Nortel Networks distributor.

BIOS upgrade floppy disk

You must perform the Intel server BIOS upgrade using a bootable floppy disk. This disk must load the MS-DOS extended memory driver, himem.sys.

Before you begin

The process of upgrading the BIOS includes four steps:

1. Make the BIOS disk bootable.
2. Update flash memory for BIOS upgrades.
3. Clear the NVRAM.
4. Run SSU to reconfigure the system and memory.

To make the BIOS upgrade disk bootable

1 From the C:\> prompt, type **sys a:** and press Enter.

2 Type **copy C:\dos\himem.sys a:** and press Enter.

3 Create a config.sys file on the floppy disk to load himem.sys. The config.sys file must contain the following line:
device=\himem.sys

To upgrade the BIOS

1. Power down the server.
2. Insert the update disk in drive A.
3. Power up the server.

   Result: The upgrade process starts automatically following the system startup.
4. Follow the instructions, depending on which version of the BIOS is currently installed on the target machine.
5. Power down the server after the update process is complete.
6. Remove the BIOS update disk from the drive.
7. Continue with the next procedure to clear the NVRAM and update the flash memory.

To clear the NVRAM

1. Power down the server.
2. Move the BIOS recovery jumper from pins 1–2 to pins 2–3.
3. Insert the BIOS recovery disk in drive A.
4. Power up the server.

   Result: When the recovery process has run its course, the system displays a message to state that the NVRAM has cleared.
5. Power down the server.
6. Remove the disk from drive A.
7. Set the BIOS recovery jumper from pins 2–3 back to pins 1–2.
8. Replace the side cover.
9. Power up the server.
10. Reconfigure the system with SSU.
11. Start up from the hard disk
12. Continue with the next procedure to configure the BIOS.

To configure the BIOS

1 Power up the server.

Result: The system displays server start-up messages.

2 Press F2 to display the Setup screen.

3 Press BIOS Default (F9) to load the default BIOS settings.

4 Ensure the BIOS settings are set to the following values:

	Setting:	**Set To:**
Main	CPU Speed Setting	350 Mhz or 450 Mhz depending on CPU speed
Advanced	Use Multiprocessor Spec	1.4
Server	PCI IRQs to I/O APIC Mapping	Disabled

5 Select Save and Exit to save the correct BIOS settings and return to the Main Menu.

SSU overview

Introduction

The System Setup Utility (SSU) configures computer systems with ISA and PCI cards.

Purpose of the SSU

The SSU automates the configuration process for systems, maintains system parameters, and stores those parameters in non-volatile RAM. If the SSU is used to assign all system resources, there should be no conflicts between adapter cards.

When to use the SSU

You must execute the SSU every time ISA or PCI adapter cards are physically added, removed, or moved in your system. Use SSU when you

- initially set up and configure the system
- encounter a configuration error message at power up
- add or remove system hardware

The SSU operates on information provided by the configuration files, configuration registers on PCI cards, and NVRAM in the system memory.

Record the SSU settings

Record the SSU settings in the system log. If the default values ever need to be restored, you must run the SSU to reconfigure the system.

SSU upgrade floppy disk

The SSU must be run from a bootable floppy disk. This disk must load the MS-DOS extended memory driver, as well as a mouse driver.

To make the SSU disk bootable

1. From the C:\> prompt, type **sys a:** and press Enter.
2. Type **copy C:\dos\himem.sys a:**\ and press Enter.
3. Create a config.sys file on the floppy disk to load himem.sys. The config.sys file must contain the following line:

   device=\himem.sys

Configuring your system using SSU

Introduction

To run the SSU, restart your system using the Nortel Networks 702t Meridian Application Server System Setup Utility disks (Version 3.0). There are three disks.

To configure the system using SSU

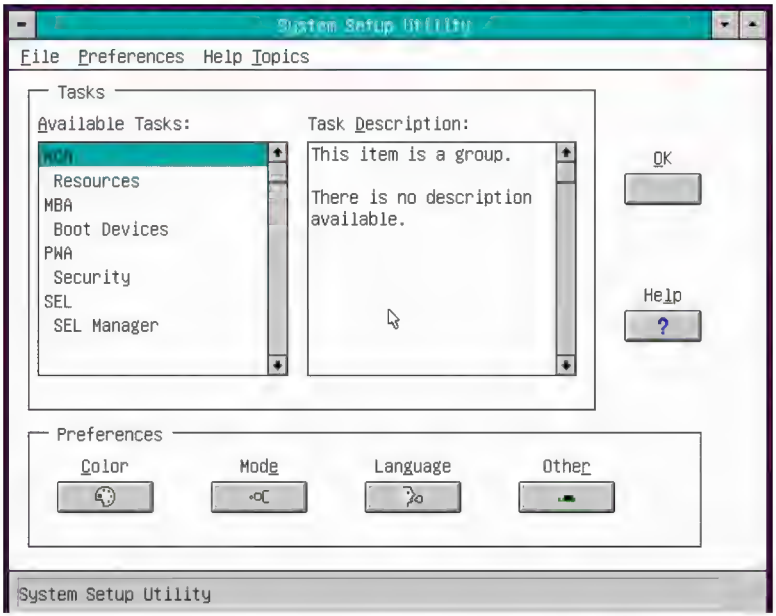
1 Reboot the CallPilot server form the SSU Version 3 Floppy disk.

2 Insert the Floppy disks as requested.

3 The system detects the mouse and keyboard and then boots into the SSU banner screen. Confirm that this is version 3.x or greater.

Note: The following descriptions assume that you have a mouse attached. If not, you can use the Tab or arrow keys to maneuver around the SSU screens.

4 Press Enter and the System Setup Utility window appears.

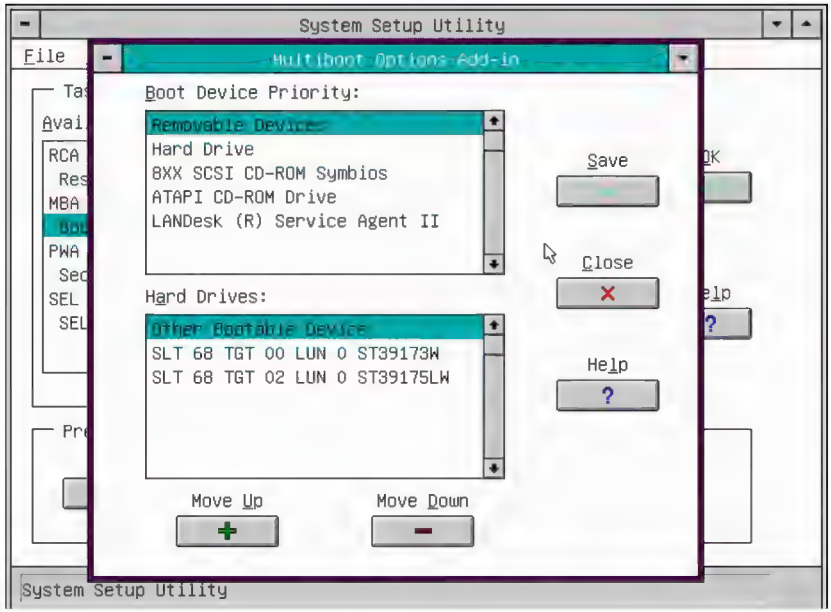


Note: You might have a later version of the SSU. The menus can differ slightly, but the steps are the same.

The box on the left describes the Available Tasks and the box on the right provides help on the highlighted task. Indented items, under the Available Task heading, are configurable. The headings are not.

5 Double-click the Boot Device Task.

Result: A Multiboot Options Add-in menu that defines the the boot devices and ordered appears.



6 You can move the Boot Device Priority item up and down by using the Move Up (+), or Move Down (-) buttons. Arrange the Boot device Priority in the order Removable Devices, Hard Drive, 8XX SCSI CD-ROM Symbios, ATAPI CD-ROM, and LANDesk.

Note: Do not make any adjustments in the Hard Drives window.

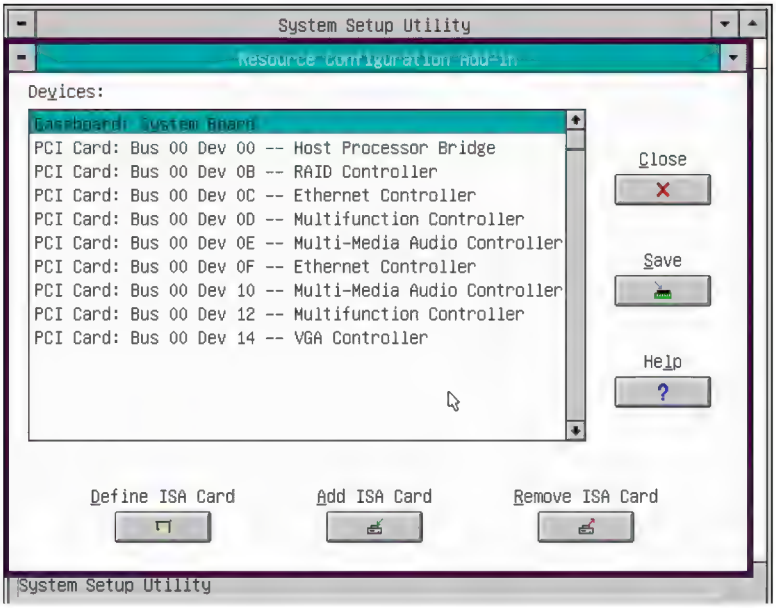
7 Save and Close the window.

Note: Do not select the Security window and enter any passwords. You might lock yourself out of the server.

8 To add a Resource, double-click the Resource under the Available Tasks window.

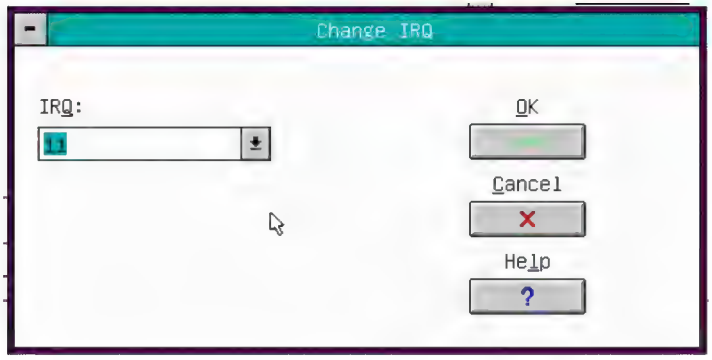
9 A window pops up asking to restore the configuration from a backup file. Click No.

Result: The Resource Configuration Add-in window appears.


System Setup Utility
Resource Configuration Add-in
Devices:
Motherboard: System Board
PCI Card: Bus 00 Dev 00 -- Host Processor Bridge
PCI Card: Bus 00 Dev 0B -- RAID Controller
PCI Card: Bus 00 Dev 0C -- Ethernet Controller
PCI Card: Bus 00 Dev 0D -- Multifunction Controller
PCI Card: Bus 00 Dev 0E -- Multi-Media Audio Controller
PCI Card: Bus 00 Dev 0F -- Ethernet Controller
PCI Card: Bus 00 Dev 10 -- Multi-Media Audio Controller
PCI Card: Bus 00 Dev 12 -- Multifunction Controller
PCI Card: Bus 00 Dev 14 -- VGA Controller
Close
Save
Help
Define ISA Card
Add ISA Card
Remove ISA Card
System Setup Utility

10 To change the IRQ of a PCI card, double-click that card (for example, the network card). A submenu appears. Double-click within the IRQ window within the PCI board window.

Result: The Change IRQ window appears.



11 Set the IRQ using the pull-down menu, and then press + Add/Change.

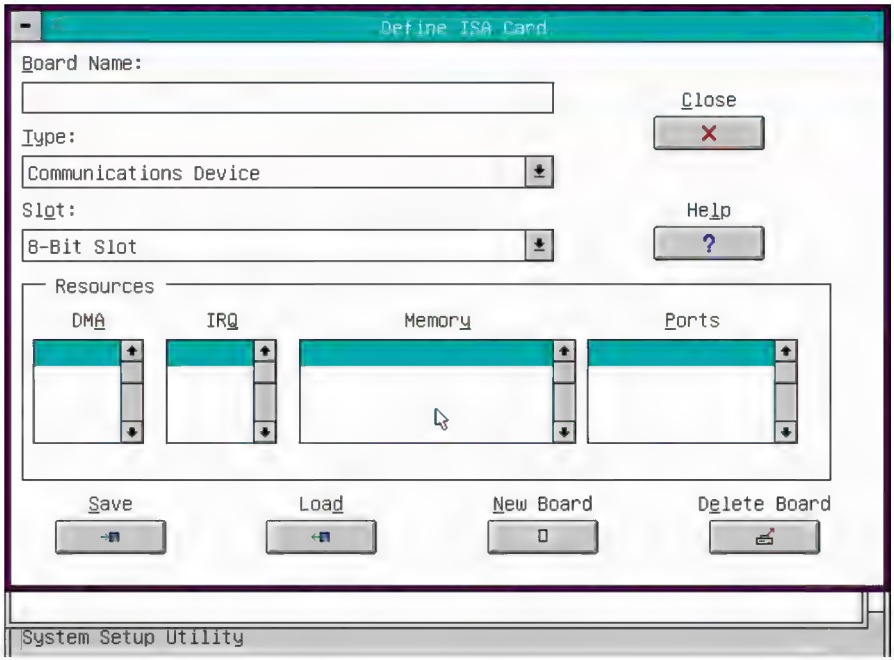
Result: You have completed changing the IRQ.

12 Click OK.

Result: The resource window appears.

13 To add an ISA card (Such as a DSE card,) click Define ISA card.

Result: The Define ISACard window appears.



14 Enter a description in the Board Name field.

- For TI board, enter **T1 ISA Board**.
- For DSE board, enter **VB2000 Board**.

15 Select Connections Device from the Type Pull down arrow.

16 Double-click the IRQ subwindow.

17 Change the IRQ to the appropriate IRQ for the connections device.

The following table shows the Resource List with the IRQs:

IRQ	Resource	
0	Baseboard: System Board	Timer
1	Baseboard: System Board	Keyboard (might be listed as Chipset)
2	Unused	
3	Baseboard: System Board	Serial Port 2 (COM 2)
4	Baseboard: System Board	Serial Port 1 (COM 1)
5	PCI Card: Bus 00 Dev 0C	Reserved for connections cards when they are used. Otherwise this is available for Ethernet Controller (CLAN).
6	Baseboard: System Board	On-Board Floppy Controller
7	Baseboard: System Board	Parallel Port (LPT1)
8	Baseboard: System Board	RTC (Real Time Clock)
9	Baseboard: System Board	ACPI SCI Interrupt
10	PCI Card: Bus 00 Dev 0F	Ethernet Controller (ELAN)
11	PCI Card: Bus 00 Dev 0E	Available for application
12	Baseboard: System Board	PS/2 mouse
13	Baseboard: System Board	Math Co-processor
14	Baseboard: System Board	On-Board IDE Controller
15	PCI Card: Bus 00 Dev 0D	Multifunction Controller - SCSI Controller
15	PCI Card: Bus 00 Dev 0C	Multifunction Controller - SCSI Controller
15	PCI Card: Bus 00 Dev 12	Multifunction Controller - USB Controller

18 Click on Add.Change in the IRQ sub-window.

19 Click Close in the define ISA card window.

20 To end click Close or continue to add cards as are needed.

Chapter 7

Installing operating system software

In this chapter

Before you begin the installation 240
Copying drivers from CD 243
Preparing the platform 245
Installing the Windows NT server operating system 247
Formatting additional hard disks/partitions 259
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Installing the tape device drivers 264
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Making an emergency repair disk 289

Before you begin the installation

Introduction

This chapter outlines procedures for installing Windows NT 4.0 software on the server.

Some of these procedures are necessary only if you must install the base software as a failure recovery procedure.

Requirements

The following is a list of the media and data components you should have before starting the Windows NT installation.

Disks received with CallPilot

- Windows NT setup disks (3 disks)
- MS-DOS 6.20 setup disks

Disks you must create

You must copy several drivers from the Application Server Driver CD to disk before starting the Windows NT installation. You will be prompted during the installation to insert the driver disk when appropriate.

Refer to "Copying drivers from CD" on page 243 to determine the procedure for working with the drivers.

Label	Contents
NTRH8003 PCI RAID driver	Mylex RAID Driver
NTRH8023 SCSI driver	Symbios SCSI Driver
NTRH8013 PCI Ethernet drivers	Intel Ethernet NIC Driver

CDs

- Application Server Driver CD

- MAS 2.0 Operating System CD

Configuration information

Use the following table to record data that you need to enter during the installation of Windows NT. Consult with the company's network administrator to obtain the values for the items listed in the table.

Item	Information from company's network administrator
Name	
Company name	
Computer name	
Administrative account password	
Remote Access	
Begin	
End	
From	
To	
Excluded	
Network - IP address	
IP address	
Subnet mask	
Default gateway	
Network - DNS	
Host name (= Computer name)	

Item	Information from company's network administrator
Domain	
DNS Service Search Order	
Domain Suffix Search Order	
Network - WINS	
Primary WINS server	
Secondary WINS server	

Copying drivers from CD

Introduction

The network drivers that you need to install during the Windows NT installation are provided on the Application Server Driver CD that is supplied with your CallPilot system. For some drivers to be functional, you must copy the drivers to disks and label them accordingly.

Requirements

- Application Server Driver CD
- blank disks (supplied with CallPilot)

To copy drivers to disk

1 Power up the server.

2 Insert the Application Server Driver CD into the CD-ROM drive.

Result: The CD starts a DOS session. After a few minutes, the MS-DOS 6.2 Startup Menu appears.

3 Select the appropriate platform type and press Enter.

Result: The platform menu appears.

4 Select the appropriate option, depending upon the driver you want to copy.

Result: The system responds with the following message: `Please insert a floppy into drive A. Press any key to continue...`

5 Insert a disk into the floppy drive and press any key.

Result: You are asked if you want to format the disk. Press **N** if the disk is blank or **Y** if the disk contains unwanted data.

If you select **Y**, DOS performs a quick format of the disk and alerts you when the format is complete.

6 The drivers are then copied to disk. When the copying is complete, the following message appears: `Diskettes successfully completed.`

Some drivers require more than one disk. After DOS has finished copying drivers to Disk 1, it displays the following message: `[x] files copied`. You are prompted to insert a blank disk into drive A. Repeat step 5 for each subsequent disk.

7 Repeat steps 4 to 6 for each driver you want to copy.

8 Nortel Networks recommends that you label the disks with the name specified in the "Disks you must create" table on page 240.

Preparing the platform

To create the FAT partition

1. Insert MS-DOS Setup Disk 1 in the floppy drive. Power up the system.

   Result: The system starts and after approximately 3 minutes displays the MS-DOS Setup screen.

2. Press F3, and when prompted, press F3 again.

   Result: The A:\> prompt appears.

3. Type **fdisk** and press Enter.

   Result: The Fixed Disk Setup Program appears.

4. Type **1** (Create DOS Partition) and press Enter.

   Result: The Create DOS Partition menu appears.

5. Type **1** (Create Primary DOS Partition) and press Enter.

   Result: You are prompted to use the maximum size for the partition.

6. Type **N** (Do not use maximum partition size) and press Enter.

   Result: You are prompted to enter primary partition size.

7. Enter 600 as the partition size for 4095 Mbyte hard drives, or 1024 for 9 Gbyte hard drives, and press Enter.

   Result: A 600 or 1024 Mbyte Primary DOS partition is created.

8. Press Escape to exit.

   Result: The main fdisk menu appears.

9. Type **2** (Set active partition) and press Enter.

   Result: You are prompted to enter the active partition.

10. Type **1** and press Enter.

    Result: The primary partition is set to active.

11. Press Escape to exit.

    Result: The main fdisk menu appears.

12 Press Escape to exit the fdisk program.

Result: You are prompted to restart the system.

13 Press Ctrl + Alt + Delete to restart the system.

Result: The system restarts. Power down the computer to prepare for the Windows NT installation.

Installing the Windows NT server operating system

To install the Windows operating system

ATTENTION

Before you start, ensure that the server is *powered down.*

1 Insert Windows NT Setup Disk 1 in the floppy drive, and power up the server.

Result: The system starts, the disk loads, and after approximately five minutes, a prompt appears for Disk 2.

2 Insert Windows NT Setup Disk 2, and press Enter.

Result: Setup loads files from Disk 2. The Windows NT Setup screen appears.

3 When prompted, press Enter to begin installation of Windows NT.

Result: On the Windows NT Server Setup screen, Setup prompts you to select automatic or manual detection of mass storage controllers.

4 Type **S** to skip automatic detection of mass storage controllers.

Result: Setup prompts you to select mass storage controllers.

5 Type **S** to select a controller.

Result: Setup displays a list of controllers.

6 Use the UP arrow key to scroll through the list and highlight IDE CD-ROM (ATAPI 1.2) / PCI IDE Controller, and press Enter.

Result: Setup prompts you to insert Windows NT Setup Disk 3 in the floppy drive.

7 Insert Disk 3 and press Enter.

Result: The Setup window appears.

8 Type **S** to select another controller.

Result: Setup displays a list of controllers.

9 Highlight Other (Requires disk provided by a hardware manufacturer) and press Enter.

Result: You are prompted to insert the manufacturer's support disk.

Note: You should have created this disk as part of the preparation for installation. If you have not created this disk, refer to "Copying drivers from CD" on page 243 for instructions on creating the disk.

10 If your system has a RAID controller, insert the NTRH8003 PCI RAID driver disk. Otherwise, insert the NTRH8023 Symbios SCSI driver disk. Press Enter.

Result: You are prompted to choose the correct driver for the installed hardware.

11 Highlight the appropriate driver for the platform and operating system version and press Enter.

Result: The driver is loaded from the disk.

12 Press Enter to continue the setup.

Result: Setup prompts you to insert Windows NT Setup Disk 3 in the floppy drive.

13 Insert Disk 3 and press Enter.

Result: Setup loads drivers from the disk.

ATTENTION

On 9-Gbyte hard disk systems, the following message might appear: `Setup has determined that one of your hard disks has more than 1024 cylinders...`. This is not a cause for concern.

14 Remove Windows NT Setup Disk 3 from the floppy drive.

15 Press Enter to continue.

Result: The system loads more driver files, then prompts you to insert the Windows NT Server CD-ROM into the CD-ROM drive.

16 Insert the CD-ROM labeled "MAS 2.0 Operating System CD" and press Enter.

Result: The Windows NT licensing agreement appears.

17 Setup requires you to scroll down to the end of the text with the Page Down key. Press F8 to agree with the licensing agreement.

Result: Setup displays the list of installed hardware components.

18 Highlight The above list matches my computer, and press Enter.

Result: The Windows NT disk partitioning screen appears.

19 Select C:FAT ... 600/1024MB option. Press Enter.

Result: The system responds with the following message: `The partition you have chosen is recognized by Windows NT but is unformatted or damaged. Setup will have to reformat this partition to install Windows NT on it.`

20 Type **C** to continue using the unformatted partition.

Result: The system responds with the following message: `You have asked to install Windows NT on the partition: "C: Unformatted or damaged..600MB or 1028MB.`

21 Highlight the Format the partition using FAT file system, and press Enter.

Result: Setup prompts you to choose the location where you want the Windows NT files installed.

22 Press Enter to accept the default installation path (\WINNT).

Result: Setup prompts you to perform a comprehensive disk check.

23 Press Enter to perform an exhaustive secondary examination of your hard drive.

Result: Setup prompts you to insert a driver disk.

24 If your system has a RAID controller, insert the NTRH8003 PCI RAID driver disk. Otherwise, insert the NTRH8023 Symbios SCSI driver disk. Press Enter.

Result: Setup copies installation files to the hard disk, and prompts you to restart.

25 Remove the MAS 2.0 Operating System CD from the CD-ROM drive, remove the SCSI/RAID driver disk from the floppy drive, and press Enter to restart the computer.

Result: The system restarts and begins the graphical portion of Windows NT setup. After approximately 3 minutes, you are prompted to insert the CD-ROM labeled “MAS 2.0 Operating System.”

To complete the Windows NT 4.0 setup

1 Insert the MAS 2.0 Operating System CD in the CD-ROM drive and click OK.

Result: Setup copies files to the system, then it prompts you to start the Windows NT Setup Wizard.

2 Click Next to continue.

Result: Setup prompts you to enter the customer name and company name.

3 Enter the name and company name, and click Next.

Result: Setup prompts you to enter the product ID.

4 Enter the assigned product ID and click Next to continue. The product ID is listed on the Certificate of Authenticity that is supplied with your server.

Result: Setup prompts you to choose the Windows NT 4.0 licensing mode.

5 On the licensing mode screen, select Per server, specify 5 as the number of concurrent connections, and click Next to continue.

Result: Setup prompts you to enter the computer name.

Note: The customer supplies the computer name.

6 Enter the computer name, and click Next to continue.

Result: Setup prompts you to select the computer's role.

7 Select the radio button for Stand-Alone Server, and click Next to continue.

Result: Setup prompts you to enter the password for the Administrator account.

Note: Passwords are case-sensitive. Ensure that the Caps Lock key on the keyboard is not on accidentally.

8 Enter the Administrator account password, and reenter it to confirm it.

Note: If installing at a customer site, enter the password specified by the Network Administrator.

9 Click Next to continue.

Result: Setup prompts you to create an Emergency Repair Disk.

To create an emergency repair disk

Because the Setup process installs further changes, if you create the emergency repair disk now, you must update the disk at the end of the installation process, using the RDisk.exe utility. To skip making a repair disk now, continue to step 13. When you are ready to make a repair disk (after installation is finished and just before putting the system into service), follow the procedure called "Making an emergency repair disk" on page 289. An emergency repair disk is important for support purposes.

10 Click Yes, create an emergency repair disk (recommended), and click Next to continue.

Result: Setup prompts you to select the Windows components to install.

To install Windows components

11 Ensure that the component check boxes are selected as follows:

a. Accessibility Options, Games, Multimedia, and Windows Messaging components are unchecked.

b. Check the Accessories component and then click Details. Uncheck all subcomponents except for the WordPad component. Click OK when done.

c. Check the Communications component and then click Details. Uncheck all subcomponents except for the HyperTerminal component. Click OK when done.

12 Click Next to install the accessories you have chosen for Windows NT.

Result: Setup prompts you to begin the setup of Windows NT Networking.

13 Click Next to install Windows NT networking.

Result: Setup prompts you to select how Windows NT participates on the network.

To configure the server for network use

14 Click This computer will participate on a network.

15 Ensure that the component check boxes are selected as follows:

- Wired to the network—Checked
- Remote access to the network—Unchecked

16 Click Next to continue.

Result: Setup prompts you to install the Internet Information Server.

17 Uncheck the "Install Microsoft Internet Information server" check box and click Next.

Result: Setup prompts you to install the network adapters.

18 Click Select from List to select the ELAN network card driver.

Result: Setup displays a list of network adapters.

19 Click Have Disk... to load the ELAN network card driver from the disk in the floppy drive.

Result: Setup prompts you to insert the network card driver disk for the ELAN card in the floppy drive.

20 Insert the NTRH8013 Ethernet driver disk in the floppy drive and click OK to continue. Specify the path if it is other than A:.

Note: You should have created this disk as part of the preparation for installation. If you have not created this disk, refer to "Copying drivers from CD" on page 243 for instructions on creating the disk.

Result: Setup prompts you to select the appropriate network card driver from a list.

21 Click the check box that describes the appropriate installed network adapter, and click OK to accept the selection.

Result: Setup returns to the Network Adapter setup screen. The driver you loaded from the floppy disk is listed and checked.

22 Click Next to continue.

Result: Setup prompts you to select the network protocols to install.

23 Ensure that the check boxes are selected as follows:

- TCP/IP Protocol: Checked
- NWLink IPX/SPX Compatible Transport: Unchecked
- NetBEUI Protocol: Unchecked

24 Click Next to continue.

Result: Setup prompts you to select which network services are installed.

25 From the Network Services Installation screen, click Select from List... .

Result: Setup displays a list of network services.

26 Use the arrow keys to scroll to SNMP Service, then click OK.

Result: You are returned to the Network Services Installation screen.

27 Click Select from List... to add additional network services.

28 Select Microsoft TCP/IP Printing and click OK.

Result: You are returned to the Network Services Installation screen.

29 Click Select from List... to add additional network services.

30 Select Remote Access Service and click OK.

Result: You are returned to the Network Services Installation screen.

31 Click Next to continue.

Result: Setup prompts you to confirm the installation of network components.

32 Click Next to install the selected networking components.

Result: Files are copied to the system.

33 Click Next to continue.

Note: At this point, Setup might prompt you with a dialog box indicating that the network card driver was loaded successfully, and you are offered a chance to run a diagnostics check. Follow the instructions on the screen to perform the test. A setup message might be: `A network card of this type is already installed in the system, do you want to continue?` Click OK to continue. This message appears when both the ELAN and CLAN cards are of the same make, model, and manufacturer. Click OK to complete the tests, then click OK to continue with the installation process.

34 You are given the option to use DHCP to configure the network. Click No to indicate that you do not wish to install DHCP.

Result: Setup prompts you to configure the SNMP Service. Because this service is added only to provide additional Performance Monitor counters, you do not need to configure it.

35 Click OK to accept the default SNMP configuration.

Result: The Add Remote Access Setup Device screen message displays the following message: `There are no RAS capable devices to Add. Do you want RAS setup to invoke the Modem Installer to enable you to add a modem?`

36 Click Yes to invoke the modem installer.

Result: The Install New Modem screen appears.

37 Check the box, Don't detect my modem, I will select it from a list.

38 Click Next.

Result: Manufacturers and models appear in the Install New Modem screen.

39 Select US Robotics Inc. from the Manufacturer list.

40 Select Sportster 28800-33600 External from the Model list.

Note: If the manufacturer and model for your modem is not listed, select "Standard Modem types" as the Manufacturer and "Standard 28,800 bps Modem" as the Model.

ATTENTION

If your modem is not listed and you have the manufacturer's installation disk, click Have disk... and follow the instructions on the screen.

41 Click Next on the Install New Modem screen showing manufacturers and models.

Result: Setup displays the port selection screen.

42 Click the radio button for Selected ports, click COM1, then click Next.

Result: The Location Information screen appears.

43 Select the customer's country, area code, and dialing option, then click Next.

Result: Setup displays the message `Your modem has been setup successfully`.

Note: The information you enter at this step can be changed later by double-clicking the Modems icon in the Control Panel, selecting this modem, and then clicking Properties.

44 Click Finish to complete the modem installation.

Result: Setup displays the Add RAS Device screen.

45 Click OK to close the Add RAS Device screen.

Result: Setup displays the Remote Access Setup screen.

46 Click Configure... .

Result: Setup displays the Configure Port Usage screen.

47 Select the Receive Calls Only radio button, then click OK.

Result: Setup redisplays the Remote Access Setup screen.

48 Click Network... .

Result: The Network configuration screen appears.

49 Ensure that the component check boxes are selected as follows:

Allow remote clients running:

- NetBEUI: Unchecked
- TCP/IP: Checked
- IPX: Unchecked

Encryption settings:

- Require Microsoft encrypted authentication: Checked
- Require data encryption: Unchecked
- Enable multi-link: Unchecked

50 Click OK to display the RAS Server TCP/IP Configuration dialog box.

51 On the dialog box, make the following selections:

a. Under Allow remote TCP/IP clients to access, select This computer only.

b. Select Use static address pool.

Note: For the next two selections, if installing at a customer site, the customer must provide these addresses.

c. Enter Begin and End addresses (for example, 192.168.0.40 and 192.168.0.254)

d. Enter From and To addresses, and enter excluded ranges, if any.

e. Uncheck Allow remote clients to request a predetermined IP address.

52 Click OK to redisplay the Remote Access Setup screen.

53 Click Continue.

Result: Files are copied to the system. Setup displays the Microsoft TCP/IP Properties window and prompts you to enter the TCP/IP parameters.

54 Enter the values provided by the customer's Network Administrator for

- IP Address (for example, 1.1.1.1)
- Subnet Mask (for example, 255.255.255.0)
- Default Gateway
- Primary WINS Server

55 Click OK.

Result: You are returned to the Windows NT Server Setup screen showing bindings.

56 Click Next to accept the defaults of the binding order of network services. Binding order is optimized later in the installation.

Result: Setup indicates that Windows NT will start the network.

57 Click Next to display the message that Windows NT Setup will start the network, and click Next again.

Result: Windows NT Setup starts the network, and prompts you to enter Domain/Workgroup settings.

ATTENTION

This dialog box configures the Domain/Workgroup settings for the CallPilot server.

58 Enter the Domain/Workgroup information.

Note: The customer's network administrator supplies the name of the workgroup.

ATTENTION

The computer must *not* belong to a Windows NT domain.

59 Click Next to add the computer to the workgroup.

Result: Windows NT prepares to complete the setup.

60 Click Finish to proceed.

Result: You are prompted for Date / Time configuration settings.

61 Enter the correct date and time, and select the time zone. Check the check box to Automatically adjust clock for daylight saving changes.

62 Click Close.

Result: Windows NT Setup detects the installed display adapter.

63 Click OK to accept the display adapter Windows NT has detected.

Result: Setup prompts you to configure the display adapter.

64 Ensure that you select the following values:

- Color Palette: 16 Colors
- Desktop Area: 640x480
- Font Size: Small Fonts
- Refresh Frequency: Use default hardware settings

Note: You must test these settings before Windows NT Setup allows you to proceed.

65 Click Test to start the test.

Result: Setup prompts you to continue with the test.

66 Click OK to proceed with the display settings test.

Result: A test screen appears. After five seconds, Setup prompts you to respond whether you saw the bitmap properly.

67 Click Yes.

Result: Setup prompts you to save the display settings.

68 Click OK to save the display settings and continue.

Result: You are returned to the display settings configuration screen.

69 Click OK to finalize the display settings and continue with Windows NT setup.

Result: Files are copied to the system. Windows NT Setup sets security on system files, and saves the system configuration. You are then prompted to insert a blank disk into the floppy drive in order to create an emergency repair disk.

70 Insert a blank disk and click OK.

Result: The disk is formatted and the configuration files are copied to the disk.

71 Remove the CD from the CD-ROM drive, and the disk from the floppy disk drive.

72 Click Restart Computer to complete Setup.

Result: Windows NT Setup restarts the server and boots to Windows NT.

What's next

Now that the basic setup of Windows NT Server 4.0 is complete, you are ready to format additional hard disks/partitions.

Formatting additional hard disks/partitions

Introduction

Perform this procedure if you have more than one hard disk installed on your server. This general procedure can be applied to all unformatted disks.

Requirements

- a server powered up, with MS-DOS and Windows NT 4.0 Server installed. The server must be powered up and display the Windows NT logon prompt.

To format additional hard disks

1 At the logon prompt, press Ctrl + Alt + Delete.

Result: The Windows NT logon box appears.

2 Log on to Windows NT.

3 Click Start > Programs > Administrative Tools (Common) > Disk Administrator.

Result: Disk Administrator notifies you that this is the first time it has been run.

4 Click OK to acknowledge the message.

Result: The Disk Administrator program might prompt you to accept that it will write a signature to each hard disk.

5 Click Yes to each request.

Result: Disk Administrator writes a signature to all disks, and then displays the main program screen.

Each SCSI disk (or RAID System Pack) is represented on this screen. Each disk has a number (Disk 0, Disk 1, and so on). Note that Disk 0 has 1 partition: a 600-Mbyte FAT partition for 4-Gbyte hard disks, or a 1-Gbyte FAT partition for 9-Gbyte hard disks. The remainder of Disk 0 is free space.

6 Select the CD-ROM by pointing and clicking.

Result: Disk Administrator highlights the CD-ROM with a thick, black border.

7 Under the Tools menu, choose Assign Drive Letter... .

Result: An Assign Drive Letter window appears.

8 Ensure Assign Drive Letter is selected and, using the drop-down box, change the CD-ROM drive letter from D: to Z:. Click OK.

Result: Setup prompts you to confirm your changes.

9 Click Yes to confirm.

10 Select the free space on Disk 0 by pointing and clicking.

Result: Disk Administrator highlights the free space with a thick, black border.

11 Under the Partition menu, choose Create Extended... .

Result: You are prompted for the size of the Extended partition.

12 Accept or enter the maximum size of the partition (the remainder of free space for the 4-Gbyte hard disk, or 4096 Mbytes for the 9-Gbyte hard disk), and click OK.

Result: The extended partition is created.

13 Click and select the free space on Disk 0.

Result: The free space is highlighted with a thick, black border.

14 Under the Partition menu, choose Create... .

Result: You are prompted for the size of the logical drive.

15 Accept (or enter) the maximum size for the logical drive, and click OK.

Result: The logical drive is created.

16 Under the Partition menu, choose Commit Changes Now... .

Result: Setup prompts you to confirm your changes.

17 Click Yes to commit the changes to disk.

Result: Setup prompts you to update your Emergency Repair Disk.

18 Click OK to continue.

Result: You are returned to the Disk Administrator program screen.

19 Select the newly created partition and, under the Tools menu, choose Format... .

Result: Setup prompts you to enter the formatting information.

20 Ensure the File system is NTFS, and check the box labeled Quick Format. Click Start to continue.

Result: Setup prompts you to confirm the format.

21 Click Yes to proceed with the format.

Result: Windows NT formats the disk/partition. A message box appears when the format is complete with the format summary information.

22 Click Close after viewing the disk format summary information.

Result: You are returned to the Disk Administrator program screen.

23 Repeat steps 6 to 18 to format the remaining disks (or system packs) in the server.

24 After partitioning all the disks, choose Exit under the Partition menu.

What's next

Install the Windows NT Service Pack 5.

Installing WinNT 4.0 Service Pack 5

Introduction

A service pack is an update Microsoft provides for Windows operating systems. Service packs provide new versions of files and fixes for problems that have been reported.

The current service pack is Service Pack 5.

CAUTION

Risk of system crash

Install the service pack only during the operating system installation and as part of an upgrade from a 1.0 CallPilot system. Do not reapply the service pack on an installed CallPilot system, except where specifically instructed to do so in the documentation.

Requirements

- CallPilot 1.07 PEP CD-ROM
- a server powered up, with Windows NT 4.0 Server installed

To install the service pack

1 Insert the 1.07 PEP CD in the CD-ROM drive.

2 Click Start > Programs > Windows NT Explorer.

3 Click the plus sign (+) next to the CD-ROM drive to display its subdirectories.

4 Select the directory named Service Pack 5.

5 Double-click the folder US-40bit and then double-click the file sp5i386.

Result: The Service Pack Install window appears.

a. Review the license agreement, and then select the Accept the License Agreement check box.

b. Uncheck the Backup files necessary to uninstall this Service Pack check box.

c. Click Install.

6 Click Finish to finish installing the service pack.

Result: The program examines the system, selects the files to copy, and then copies them. If messages appear, refer to the next step for the action to take in response.

7 As the files are installed, the following message might appear: `The target file exists and is newer than the source. Overwrite the newer file?` Click No.

When asked if you want to replace a file, always click No.

Result: The service pack is installed.

8 Click Restart.

Result: The computer restarts.

9 After the server is restarted, remove the CallPilot PEP CD.

What's next

If this is a new installation, install the tape device drivers.

If you installed Service Pack 5 as part of a CallPilot upgrade, continue with "Upgrading from 1.0 or 1.06 to 1.07" on page 349.

Installing the tape device drivers

Introduction

Perform this procedure after installing the Windows NT Server and Service Pack 5.

Requirements

- a server powered up, with MS-DOS and Windows NT 4.0 Server installed
- Application Server Driver CD
- a blank disk

Before you begin

The tape device drivers that you need to install are provided on the Application Server Driver CD. For the drivers to be functional, you must copy the drivers to disk before starting the installation.

It is important to review the help.txt file that is supplied on the Application Server CD for the directory location of the drivers on the CD.

To copy the drivers to disk

1. Ensure that all system and hidden files are displayed by clicking on the My Computer icon, selecting View from the menu bar, and then selecting Options.. .
2. In the View tab, select Show all files.
3. Click OK.
4. Insert the Application Server Driver CD into the CD-ROM drive.
5. Insert a blank disk into the floppy drive.
6. Use Windows Explorer to navigate to the directory on the CD-ROM containing the drivers you require. Highlight the contents of the directory.

   Note: The directory information is provided in the help.txt file on the Application Server CD.

7 Right-click the highlighted contents and select Send To.. 3 1/2 Floppy (A).

Result: Driver files are copied onto disk and are ready for use.

To install the tape device driver

1 At the logon prompt, press Ctrl + Alt + Delete to display the Windows NT logon box.

2 Log on to the system using the customer's Administrator ID and password. Click OK.

3 Click Start > Settings > Control Panel, and double-click the Tape Devices icon.

Result: On the Tape Devices control panel, Windows NT attempts to detect the installed tape drive(s). The list of available tape drives appears.

4 If the tape driver is not listed, click Have disk... .

5 When prompted, insert the driver disk you created in "Before you begin" on page 264, into the floppy drive and click OK. Enter the drive letter (for example: A:).

Result: You are prompted to select a device driver from the displayed list.

6 Select Seagate tandquic (Tandberg Tape QIC SCSI drives, all), and click OK.

Result: You are prompted to install the selected driver.

7 Type OK to install the selected driver.

Result: The driver files are copied to the system and you are prompted to restart the computer. Remove the floppy drive before restarting the computer.

8 When prompted, insert the MAS 2.0 Operating System CD-ROM and click OK.

Result: The files are copied to the system, and the Tape Devices control panel appears.

9 Click OK to close the control panel and save the changes.

What's next

Install video card device drivers if required.

Installing video card device drivers

Introduction

Install the video drivers after Service Pack 5 has been applied to the system and you install pcANYWHERE32.

Note: Currently, Windows NT 4.0 Service Pack 5 uses the default video card device drivers that are supplied with Windows NT 4.0. Follow this procedure only if a new video device driver has been issued by Microsoft.

Requirements

- a server powered up, with Windows NT 4.0 and Service Pack 5 installed
- Application Server Driver CD
- a blank disk

Before you begin

The video card device drivers that you need to install are provided on the Application Server Driver CD. For the drivers to be functional, you must copy the drivers to disk before starting the installation.

It is important to review the help.txt file that is supplied on the Application Server CD for the directory location of the drivers on the CD.

To copy the drivers to disk

1. Ensure that all system and hidden files are displayed by clicking on the My Computer icon, selecting View from the menu bar, and then selecting Options.. .
2. In the View tab, select Show all files.
3. Click OK.
4. Insert the Application Server Driver CD into the CD-ROM drive.
5. Insert a blank disk into the floppy drive.

6 Use Windows Explorer to navigate to the directory on the CD-ROM containing the drivers you require. Highlight the contents of the directory.

Note: The directory information is provided in the help.txt file on the Application Server CD.

7 Right-click the highlighted contents and select Send To.. 3 1/2 Floppy (A).

Result: Driver files are copied onto disk and are ready for use.

To install the video card device driver

1 Press Ctrl + Alt + Delete.

Result: The Windows NT logon box appears.

2 Log on to Windows NT as Administrator.

3 Click Start > Settings > Control Panel.

4 Double-click the Display icon, then click Settings.

5 Click Display Type, then click Change.

6 Select the appropriate device driver for the installed video card and click OK to continue.

Result: You are prompted to install the selected driver. If this is the correct driver, skip to Step 8.

If the video card driver is not listed, insert the driver disk you created in "Before you begin" on page 266 and click Have Disk... .

Result: You are prompted to insert the disk.

7 Insert the Video card device driver disk in the floppy drive, enter the drive letter (for example, a:\), and click OK.

Result: You are prompted to select a device driver from the displayed list.

8 Select the most appropriate driver and click OK to continue.

Result: You are prompted to install the selected driver.

9 Click OK to install the selected driver.

Result: You are prompted to insert the MAS 2.0 Operating System CD.

10 Insert the MAS 2.0 Operating System CD in the CD-ROM drive, and click OK.

Result: The driver files are copied to the system. The Display Type control panel appears.

11 Click OK to close the control panel and save the changes.

Result: You are returned to the Windows NT Control Panel.

What's next

Install the RAID Monitoring/Administration utility.

Install RAID Monitoring/Administration utility

Introduction

If a PCI RAID card was installed, install the monitoring and administration utilities for the RAID card under Windows NT.

Installing the RAID utility

1 Insert the DAC960 driver disk in the floppy drive.

2 Click Start > Programs > Command Prompt.

3 Type the following commands to complete the RAID card configuration.

Note: Note the path Windows NT 4.00 (c:\winnt\). Make the appropriate changes as you execute the steps below:

copy a:\nt*.* c:\winnt\system32\

Result: The system displays the following message: `7 files(s) copied`

srvccfg dacmon dac960Monitor c:\winnt\system32\dacmon.exe

Result: The system displays the following message: `Service Installed successfully`

net start dacmon

Result: The system displays the following message: `The dac960Monitor service is starting. The dac960Monitor service was started successfully.`

4 After the execution of the last command, a window is launched minimized in the TaskBar (NT 4.0).

5 Close the Command Prompt window and remove the floppy disk.

What's next

Install pcANYWHERE.

Installing pcANYWHERE32

Introduction

The process of installing pcANYWHERE32 involves the following procedures:

1. Install the pcANYWHERE32 application on the server.
2. Start pcANYWHERE32 for the first time. This procedure allows you to set the network device.
3. Set the video mode. This procedure synchronizes the video card settings with that of the administration client PC to ensure the remote user can see the server graphical user interfaces properly.
4. Set the pcANYWHERE32 service to Automatic. This procedure enables the pcANYWHERE32 service to start automatically after reboot.

To install pcANYWHERE on the server

1 Log on as administrator.

2 Insert the MAS 2.0 Operating System CD into the CD-ROM drive.

3 Ensure all other Windows applications are closed.

4 Navigate to the Installs\Pca32\Disk1 folder on the CD-ROM drive as follows:

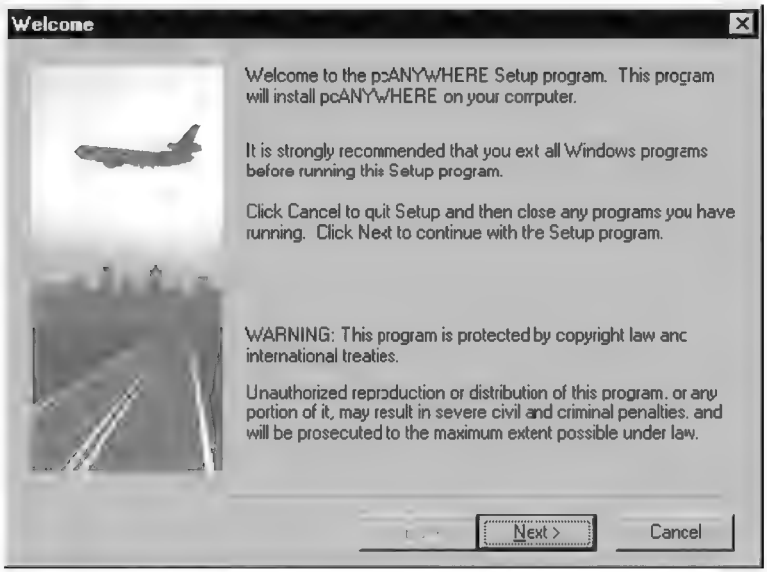
   a. Double-click Installs.

   b. Double-click Pca32.

   c. Double-click Disk1.

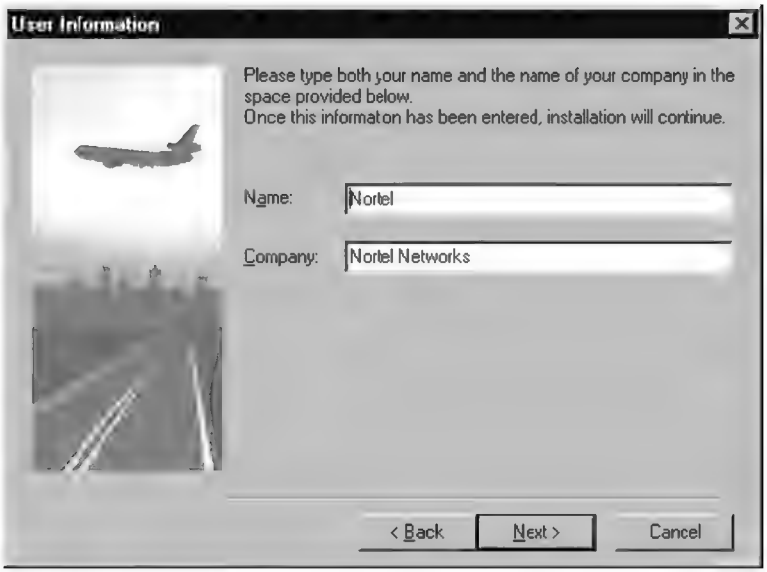
d. Locate and double-click the Setup application file.

Result: The Welcome to pcANYWHERE setup program window appears.


Welcome
Welcome to the pcANYWHERE Setup program. This program will install pcANYWHERE on your computer.
It is strongly recommended that you ext all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law anc international treaties.
Unauthorized reproduction or distribution of this program. or any portion of it, may result in severe civil and criminal penalties. and will be prosecuted to the maximum extent possible under law.
Next >
Cancel

5 Click Next to start the installation.

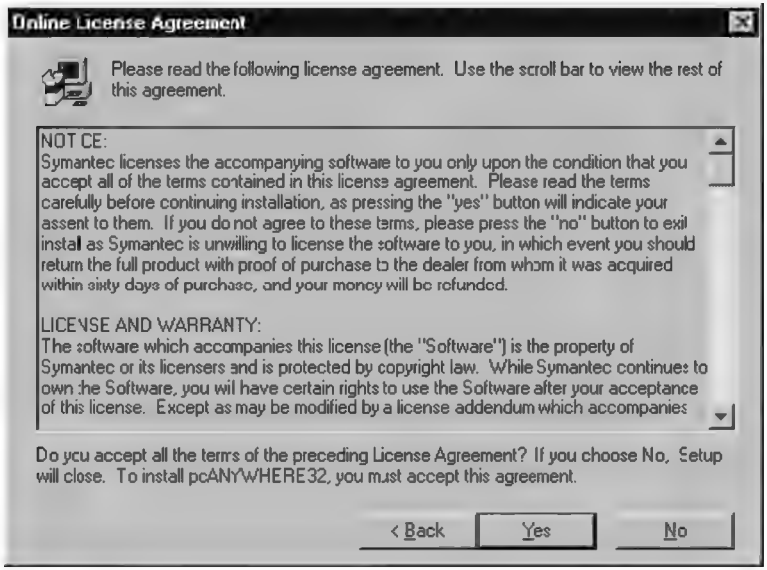
Result: The User Information window appears.


User Information
Please type both your name and the name of your company in the space provided below.
Once this information has been entered, installation will continue.
Name:
Nortel
Company:
Nortel Networks
< Back
Next >
Cancel

6 Enter the user name and company name, then click Next.

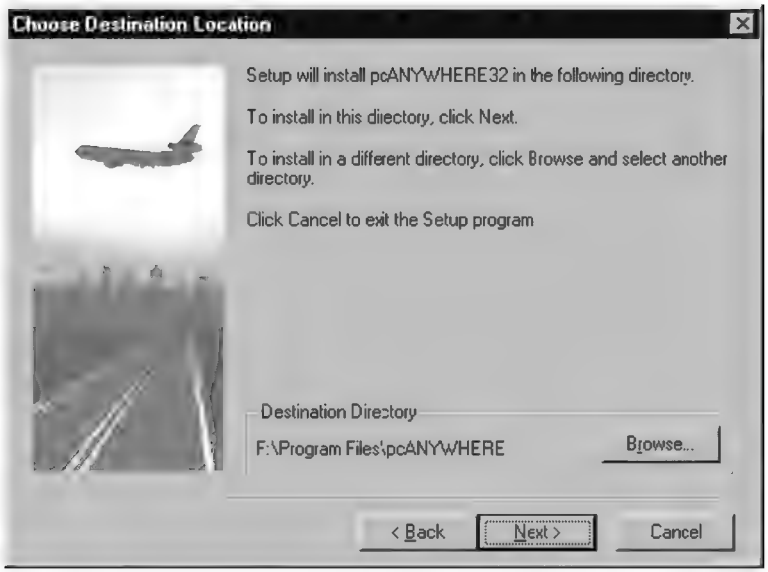
Note: Ensure that the name and company are the same as those entered during the Windows NT installation.

Result: The Online License Agreement window appears.


Online License Agreement
Please read the following license agreement. Use the scroll bar to view the rest of this agreement.
NOTICE:
Symantec licenses the accompanying software to you only upon the condition that you accept all of the terms contained in this license agreement. Please read the terms carefully before continuing installation, as pressing the "yes" button will indicate your assent to them. If you do not agree to these terms, please press the "no" button to exit install as Symantec is unwilling to license the software to you, in which event you should return the full product with proof of purchase to the dealer from whom it was acquired within sixty days of purchase, and your money will be refunded.
LICENSE AND WARRANTY:
The software which accompanies this license (the "Software") is the property of Symantec or its licensers and is protected by copyright law. While Symantec continues to own the Software, you will have certain rights to use the Software after your acceptance of this license. Except as may be modified by a license addendum which accompanies
Do you accept all the terms of the preceding License Agreement? If you choose No, Setup will close. To install pcANYWHERE32, you must accept this agreement.
< Back
Yes
No

7 Click Yes to accept the software license agreement.

Result: The Choose Destination Location window appears.


Choose Destination Location
Setup will install pcANYWHERE32 in the following directory.
To install in this directory, click Next.
To install in a different directory, click Browse and select another directory.
Click Cancel to exit the Setup program
Destination Directory
F:\Program Files\pcANYWHERE
Browse...
< Back
Next >
Cancel

8 Click Next to accept the default directory.

Result: The Setup Review screen appears.

Setup Review
pcANYWHERE Setup will now automatically:
1) Update the Windows Registry
2) Create a program group
3) Copy files
The pcANYWHERE program will be copied to the following location:
F:\Program Files\pcANYWHERE
< Back
Next >
Cancel

9 Click Next to continue.

Result: Program and other files are copied to the system.

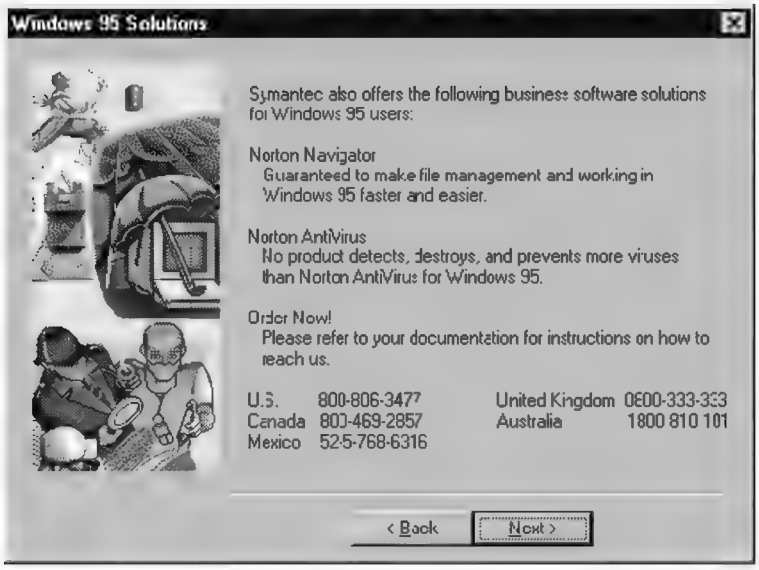
When installation is complete, the Symantec Support Solutions screen appears.

Symantec Support Solutions
StandardCare Support
Unlimited use of electronic and automated services and limitec time telephone technical suppot at no charge.
ProrityCare Support
Fast access support designed for occasional callers (charged on a per minute basis).
PremiumCare Support
Fast access, cost-effective support for frequent callers (charged on a per-year basis).
See your product manual for details about support programs designed to help you get the most out of your software.
Services available may vary by country. Symantec reserves the right to change its support policies at any time.
Next >

10 Click Next to display the How To Reach Us screen.

11 Click Next to continue.

Result: The Windows 95 Solutions screen appears.


Windows 95 Solutions
Symantec also offers the following business software solutions for Windows 95 users:
Norton Navigator
Guaranteed to make file management and working in Windows 95 faster and easier.
Norton AntiVirus
No product detects, destroys, and prevents more viruses than Norton AntiVirus for Windows 95.
Order Now!
Please refer to your documentation for instructions on how to reach us.
U.S. 800-806-3477
Canada 800-469-2857
Mexico 525-768-6316
United Kingdom 0800-333-333
Australia 1800 810 101
< Back
Next >

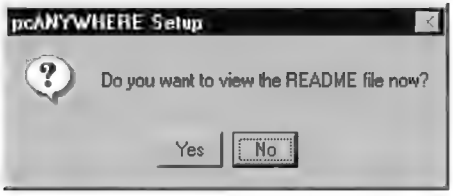
12 Click Next to continue.

Result: The Registration Wizard screen appears.

Registration Wizard
Please take a moment to register now
Register now to be eligible for 90 days of free technical support, special upgrade pricing, and up-to-date product and company information.
To register, select the location nearest you from the list below. To continue without registering, click Skip.
Select location:
Canada
Click Next to continue registering.
SYMANTEC.
Next >
Skip

13 Click Skip.

Result: You are asked if you want to view the README file now.



14 Click No.

Result: Setup prompts you to restart the computer.

Setup Complete
Congratulations!!!
pcANYWHERE32 for Windows 95 and Windows NT has been successfully installed on your computer.
Windows must be restarted before pcANYWHERE is run and before installing any other applications.
Yes, I want to restart my computer now
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
Finish

15 Click No, I will restart my computer later, and then click Finish.

Result: pcANYWHERE32 setup terminates.

To start pcANYWHERE32 for the first time

1 Click Start > Programs > pcANYWHERE32 > pcANYWHERE.

Result: The Smart Setup Wizard window appears, and you are prompted for the modem device.

Smart Setup Wizard
Please select the modem device to be used as the default for modem connections.
If you want to add a modem not listed here, click the "Add Modem" button.
Modem:
Sportster 2880C-33600 External
Add Modem
Next >
Cancel

2 Ensure that the Sportster 28800-33600 External modem is selected, then click Next.

Result: The system prompts you to select the network device.

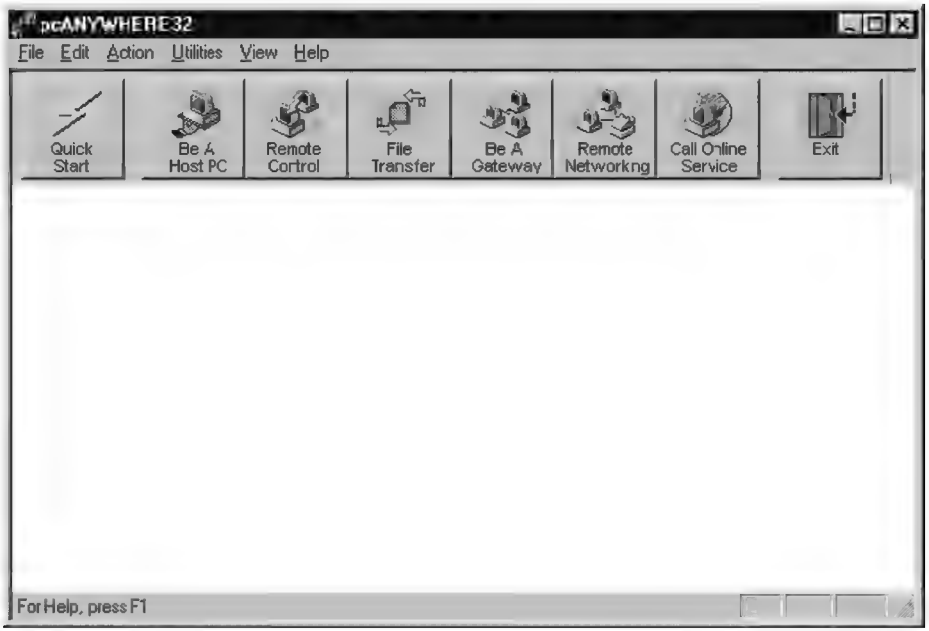
Smart Setup Wizard
Please select the network device to be used as the default for network connections.
TCP/IP
*If you do not have a network, or you do not know what your network type is, you can select one later.
< Back
Next >
Cancel

3 Ensure that only TCP/IP is selected, and then click Next.

Result: The system prompts you to select a port.

4 Ensure that you select COM1, then click Finish.

Result: The pcANYWHERE32 window appears.

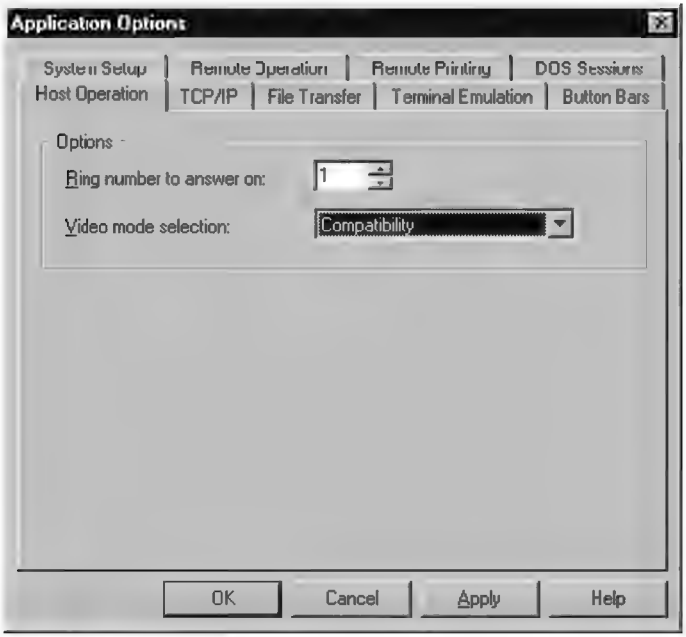


To set the video mode

1 From the File menu, select Application Options.

Result: The Application Options dialog box appears.

2 Click the Host Operation tab.



3 In the Video mode selection drop-down list, select Default—Accelerator Enabled, and then click Apply.

4 Click OK to close the window.

Result: The pcANYWHERE32 window appears.

5 To finish the installation, on the pcANYWHERE32 window, click File > Exit.

6 If you performed the installation from the CD-ROM drive, remove the CD from the drive.

To perform the pcANYWHERE32 patch installation

Note: The pcANYWHERE32 patches are located on the CallPilot server CD in the following directory: platform\default\nortel\data\PCANYW_1

1 Install the 802up_a Patch. From the CallPilot server CD, run platform\default\nortel\data\PCANYW_1\802up_a\disk1\setup.exe.

2 Double-click the setup.exe icon.

Result: The Welcome window appears.

3 Click Next.

Result: The Start Copying Files window shows the path for copying files.

4 Click Next.

Result: Setup copies files to the directories, and then the Setup complete window appears.

5 Select No, I will restart my computer later, and then click Finish.

Note: Do not restart the computer.

6 Install the 802up_b Patch. The setup executable can be found on the CallPilot server CD in the following directory: platform\default\nortel\data\PCANYW_1\802up_b\setup.exe.

7 Double-click setup.exe.

Result: The Welcome window appears.

8 Click Next.

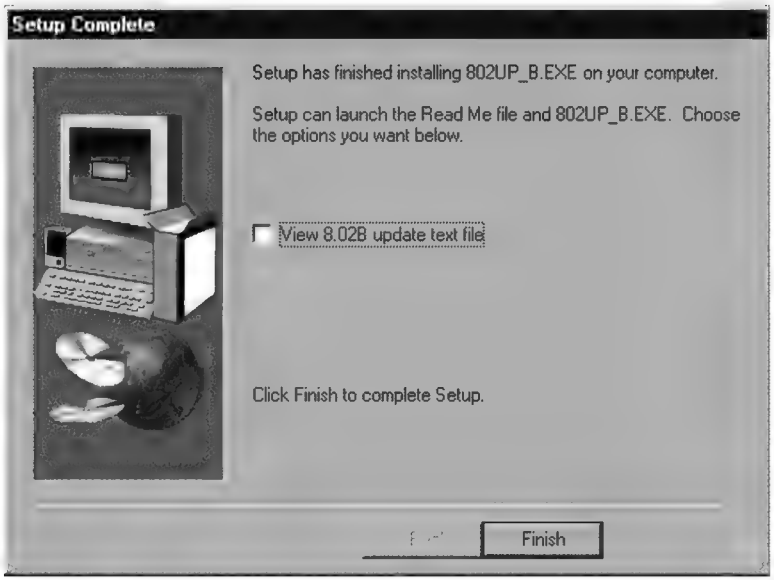
Result: The Start Copying Files window appears, showing the path for copying files.

9 Click Next.

Result: Setup copies files to the directories, and then the Setup Complete window appears.

10 Select No, I will restart my computer later.

11 If you see the following screen, ensure the check box is unchecked, and then click Finish.


Setup Complete
Setup has finished installing 802UP_B.EXE on your computer.
Setup can launch the Read Me file and 802UP_B.EXE. Choose the options you want below.
View 8.02B update text file
Click Finish to complete Setup.
Finish

12 Restart the computer by clicking Start > Shutdown. Select Restart the Computer, and then click OK.

To configure pcANYWHERE

1 Click Start > Programs > pcANYWHERE32 > PCAnywhere.

2 Select Be a Host PC.

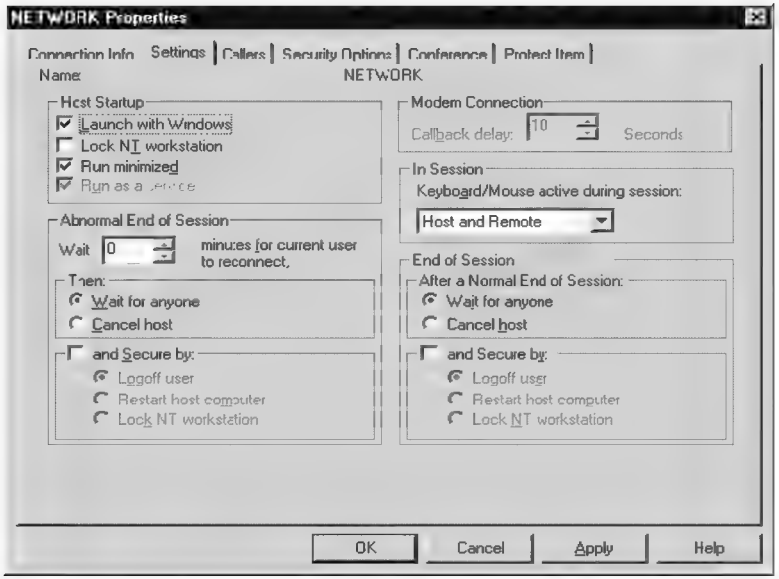
3 Right-click the Network icon, and then click Properties.

Result: The Network Properties sheet appears.

4 Click the Connection Info tab.

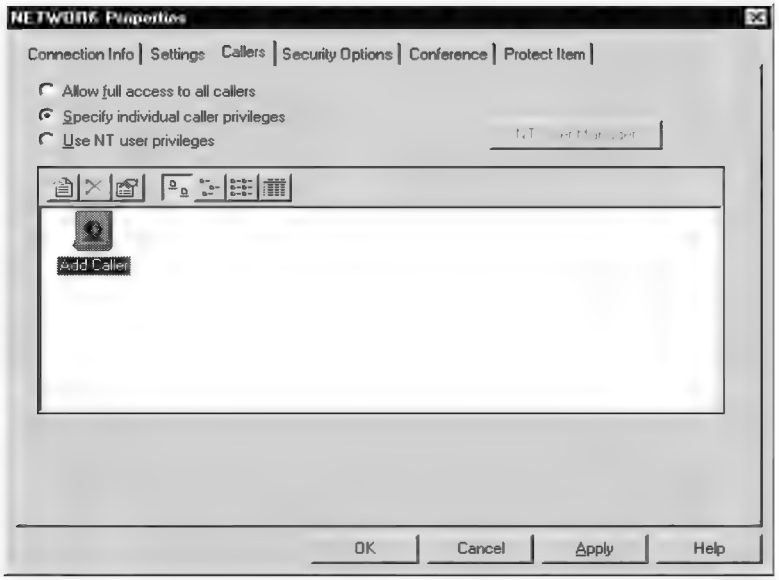
5 Ensure that only TCP/IP is checked.

6 Click the Settings tab and select the Launch with Window check box. Ensure that the settings are as shown in the following example:



7 Click the Callers tab.

8 Click Specify individual caller privileges, as in the following example:



9 Double-click Add Caller.

Result: The New Caller Wizard window appears.

10 Enter CallPilotDist and click Next.

11 Type CallPilotDist for the logon name.

12 In the Password field, type the new CallPilotDist password.

13 In the Confirm Password field, retype the new CallPilotDist password.

14 Click Next.

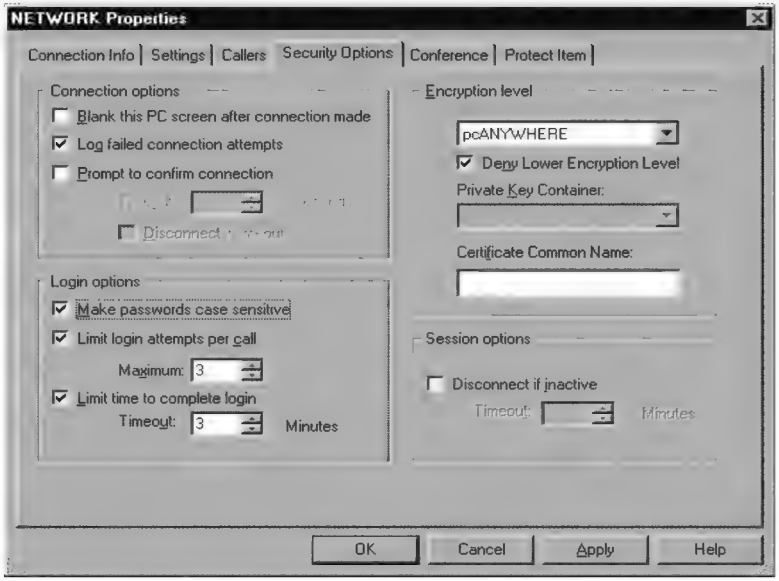
15 Click Finish.

Result: The Network Properties sheet appears.

16 Click the Security Options tab and select the check boxes for the following entries:

- Log failed connection attempts
- Make passwords case-sensitive
- Deny lower encryption level

17 Ensure that the settings are as shown in the following example:



18 If you want to assign a password to control who can modify the Network icon settings, click the Protect Item tab, then enter a password on this screen.

19 Click OK to apply all pcANYWHERE32 settings.

What's next

If necessary, make an emergency repair disk. Otherwise, refer to Chapter 8, "Installing CallPilot server software," to install the CallPilot server software.

Making an emergency repair disk

Introduction

An emergency repair disk enables you to start the server in the event that Windows NT on the server does not start.

ATTENTION

An emergency repair disk should only be used by support personnel or as requested by support personnel.

It is important that the emergency repair disk be updated on a regular basis (after any maintenance activities are performed on the server or anytime the server configuration changes).

Requirements

- a blank 3.5 inch disk (not supplied with CallPilot). Label this disk "Emergency Repair Disk."
- a server with Windows NT 4.0 and the service pack installed (see "To install the service pack" on page 262)

To make an emergency repair disk

1. Power up the server.
2. Press Ctrl + Alt + Delete to display the logon window.
3. Log on to Windows NT as Administrator.
4. Insert the blank disk in the floppy drive.
5. Click Start, and then click Run.
6. When prompted, type **rdisk** and click OK.
7. Click Update Repair Info.

8 Click Yes to continue.

Result: Setup prompts you to create the Repair disk.

9 Click Yes.

10 Click OK at the prompt.

Result: The disk is formatted and configuration files are copied to the disk being created.

11 When complete, remove the disk from the floppy drive.

12 Click Exit on the Repair Disk Utility.

What's next

Install the CallPilot server software.

Chapter 8

Installing CallPilot server software

In this chapter

Section A: Installing the CallPilot server software (for all switch types) 293

Installing the CallPilot server software 294

Section B: Installing Performance Enhancement Packages (PEPs) 301

Installing PEPs 302

Section C: Installing switch connectivity software 311

Installing software for the Lucent, Mitel, and Rolm switch 312

Installing software for the MSL-100/DMS-100 switch 325

Section A: Installing the CallPilot server software (for all switch types)

In this section

Installing the CallPilot server software 294

Installing the CallPilot server software

Introduction

This section describes the steps required to install CallPilot software on a CallPilot server that is already loaded with the Windows NT 4.0 operating system and the device drivers required by CallPilot.

Requirements

- CallPilot 1.07 Server CD
- CallPilot 1.07 PEP CD
- CallPilot 1.07 Language CD
- a server powered up, with Windows NT 4.0, Service Pack 5, and all the device drivers installed
- current password for the Administrator account (this password was set during the installation of Windows NT)

ATTENTION

During an installation, there are stages during which the setup program performs automatic installation steps between setup windows. Do not close or click on any windows that appear during these steps unless you are prompted. Wait for the next wizard setup window before you use the mouse or keyboard.

Installation procedures

These procedures apply to all switch types.

To select the platform type

This table provides information about each server that will assist you in selecting the platform type:

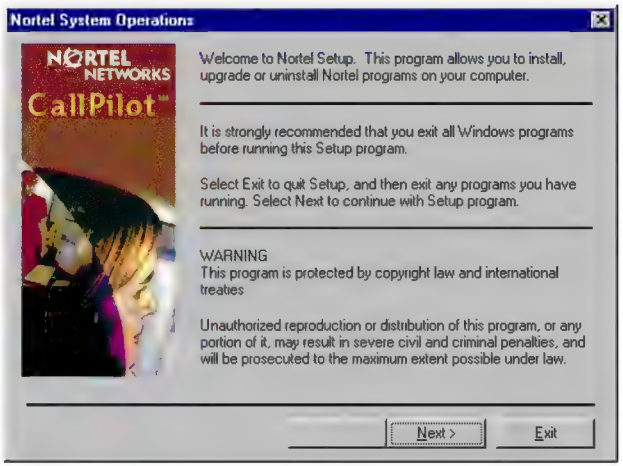
Prompts	200i	702t	1001rp
machine class	IPE	TRP	TRP
machine type	IPE	Tower	Rack
platform series	200	702	1001
backplane type	Active	Active	Passive

To install the CallPilot server software

1 Insert the CallPilot 1.07 Server CD into the CD-ROM drive and launch Windows NT Explorer.

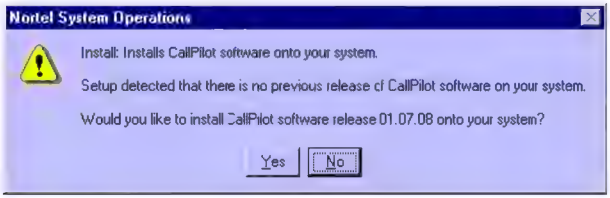
2 Click on the CD-ROM drive, and then double-click Setup to start the CallPilot installation.

Result: The Nortel System Operations window appears.


Nortel System Operations
NORTEL NETWORKS
CallPilot
Welcome to Nortel Setup. This program allows you to install, upgrade or uninstall Nortel programs on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Select Exit to quit Setup, and then exit any programs you have running. Select Next to continue with Setup program.
WARNING
This program is protected by copyright law and international treaties
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
Next >
Exit

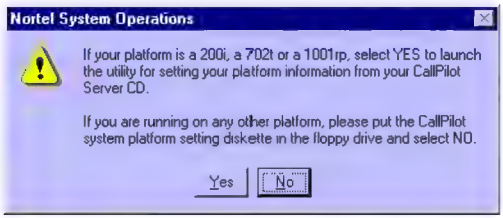
3 Click Next.

Result: You are asked to confirm the installation of CallPilot files onto your PC.


Nortel System Operations
Install: Installs CallPilot software onto your system.
Setup detected that there is no previous release of CallPilot software on your system.
Would you like to install CallPilot software release 01.07.08 onto your system?
Yes
No

4 Click Yes.

Result: You are prompted to start the platform setting procedure.

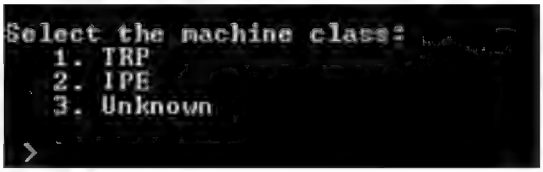

Nortel System Operations
If your platform is a 200i, a 702t or a 1001rp, select YES to launch the utility for setting your platform information from your CallPilot Server CD.
If you are running on any other platform, please put the CallPilot system platform setting diskette in the floppy drive and select NO.
Yes
No

5 If the server is a 200i, 702t, or a 1001rp, click Yes to perform the platform setup from CD.

Result: The Platform Type Information Test Application window appears.

6 Type **1** to set the platform type and press Enter.

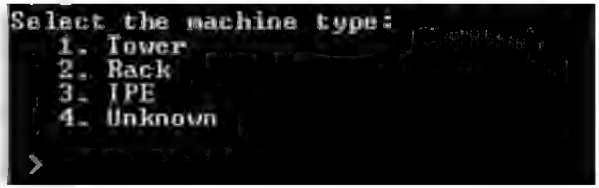
Result: The system prompts you to identify the machine class.



7 Type **1** for the 702t or the 1001rp.

Type **2** for the 200i.

Result: The system prompts you to identify the machine type.

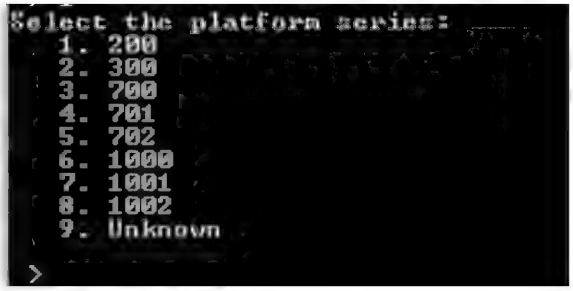


8 Type **1** for the 702t.

Type **2** for the 1001rp.

Type **3** for the 200i.

Result: The system prompts you to identify the platform series.



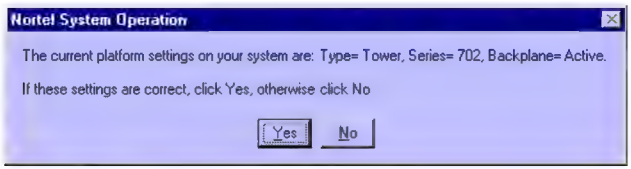
9 Type the number that identifies your server's model number. Press Enter.

Result: The Select the backplane type prompt appears.

10 Type **1** for the 200i or the 702t.

Type **2** for the 1001rp.

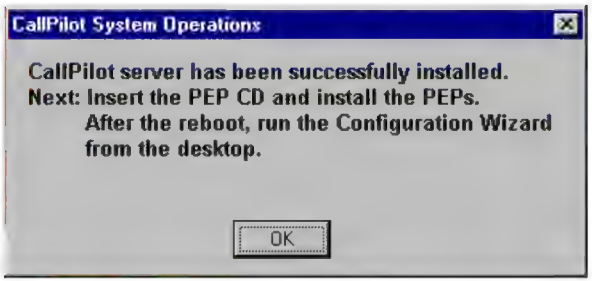
Result: The Nortel System Operations window appears.


Nortel System Operation
The current platform settings on your system are: Type= Tower, Series= 702, Backplane= Active.
If these settings are correct, click Yes, otherwise click No
Yes
No

11 If the settings are correct, click Yes to initiate the installation. Otherwise, click No to rerun the platform setting procedure.

12 The installation setup process runs automatically (taking 15 to 30 minutes). A series of messages appear to indicate the items that are being installed (for example, backup/restore, MMFS).

Result: When installation is complete, the following prompt window appears:


CallPilot System Operations
CallPilot server has been successfully installed.
Next: Insert the PEP CD and install the PEPs.
After the reboot, run the Configuration Wizard
from the desktop.
OK

13 Remove the Server CD and insert the CallPilot 1.07 PEP CD. Click OK.

What's next

Install any required PEPs.

Section B: Installing Performance Enhancement Packages (PEPs)

In this section

Installing PEPs 302

Installing PEPs

Introduction

For an initial installation of CallPilot, the Performance Enhancement Packages (PEPs) are provided on a CD.

If you are using this procedure for a CallPilot system that is up and running, new PEPs are issued on the NIC web site:

http://www.nortelnetworks.com/prd/nic

You require a password to access this site.

CAUTION

Risk of system problems

For specific PEP installation instructions, refer to the readme files that are in the PEP CD root directory and in the folder for each PEP package. In many cases, PEPs must be uninstalled and installed in a specific order. The readme files provide these instructions. When the readme files instruct you to uninstall or install PEPs, refer to the procedures in this section.

ATTENTION

If your CallPilot system is up and running, Nortel Networks recommends that you perform a system backup before you install a new PEP.

See *Monitoring and Security for the Administrator* for more information on performing a backup.

Identifying the PEPs

PEPs are labeled on the CD in the following format:

NMxxyyzzPwwwQ

where

xxyyzz	is the release level (for example, 010707)
P	can be "R" for a restricted PEP, "D" for a diagnostic PEP, or "G" for a general PEP
www	PEP number for the release. Range is from 001 to 999
Q	indicates platform type (for example, "S" denotes a PEP for the server)

Readme files

Readme files are provided in the following locations on the PEP CD:

- Root directory on the PEP CD

  This readme file provides a general description of the PEP packages and general PEP install and uninstall instructions.

- In each PEP package folder

  These readme files provide a list of all the PEPs in that package, and specific PEP install and uninstall instructions.

- In each PEP folder

  These readme files describe the purpose of that PEP and might provide some PEP installation instruction.

To install a PEP package

1. Ensure that you are logged on to the server where you are going to begin PEP installation. Use a logon account that has administrative privileges (for example, administrator).
2. Insert the CallPilot 1.07 PEP CD.
3. Read the readme files that are in the PEP CD root directory and in the folder for each PEP package for specific uninstallation and installation instructions.

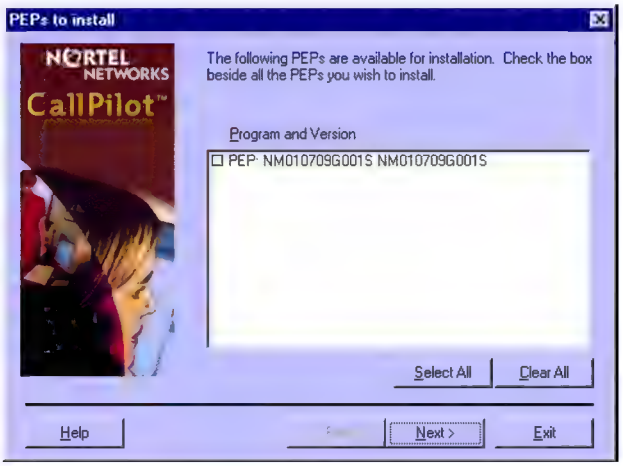
4 Double-click runme.exe.

Result: Setup examines the system, and the PEP's to install window appears.

ATTENTION

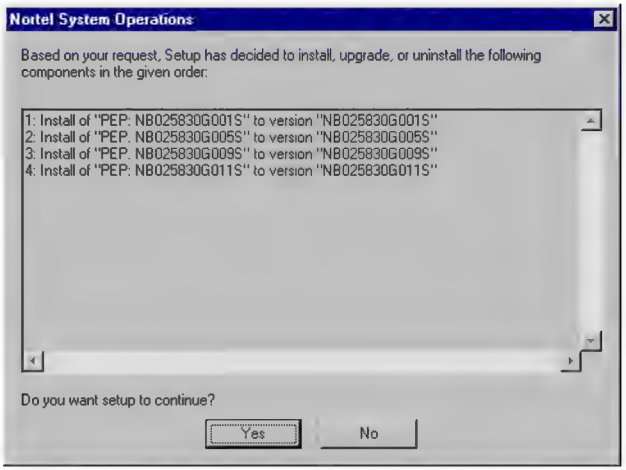
It can take 5 to 20 minutes for the PEPs to install window to appear, depending on the number of PEPs and the system configuration. In the meantime, a gray box might appear while the window is loading. Do not use the mouse or keyboard during this time

Note: The following example is for illustration purposes only, and might not reflect what appears on your system.



5 Select the PEPs to install, then click Next. If you are uncertain about which PEPs to install, refer to the Readme file located in the root directory of the CD.

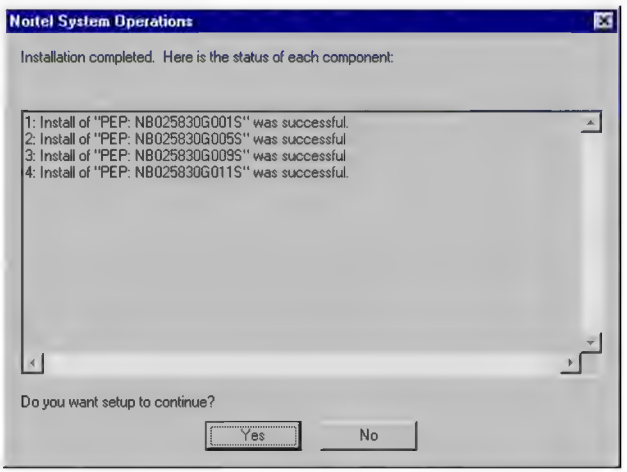
Result: The Nortel System Operations window appears and lists all components in the order in which they will be installed.


Nortel System Operations
Based on your request, Setup has decided to install, upgrade, or uninstall the following components in the given order:
1: Install of "PEP: NB025830G001S" to version "NB025830G001S"
2: Install of "PEP: NB025830G005S" to version "NB025830G005S"
3: Install of "PEP: NB025830G009S" to version "NB025830G009S"
4: Install of "PEP: NB025830G011S" to version "NB025830G011S"
Do you want setup to continue?
Yes
No

6 Click Yes to continue.

Result: The system automatically shuts down all services and the PEPs are installed. A summary of the installation appears, showing the success or failure of each PEP operation.

Note: CallPilot automatically removes obsolete PEPs when you install new PEPs.


Nortel System Operations
Installation completed. Here is the status of each component:
1: Install of "PEP: NB025830G001S" was successful.
2: Install of "PEP: NB025830G005S" was successful
3: Install of "PEP: NB025830G009S" was successful
4: Install of "PEP: NB025830G011S" was successful.
Do you want setup to continue?
Yes
No

7 Click Yes to complete the procedure.

Result: The program ends.

8 Repeat this procedure for other PEP packages. A reboot is required after installing PEPs.

To uninstall a PEP package

CallPilot automatically removes obsolete PEPs when you install new PEPs. However, there can be times when you want to uninstall a PEP yourself.

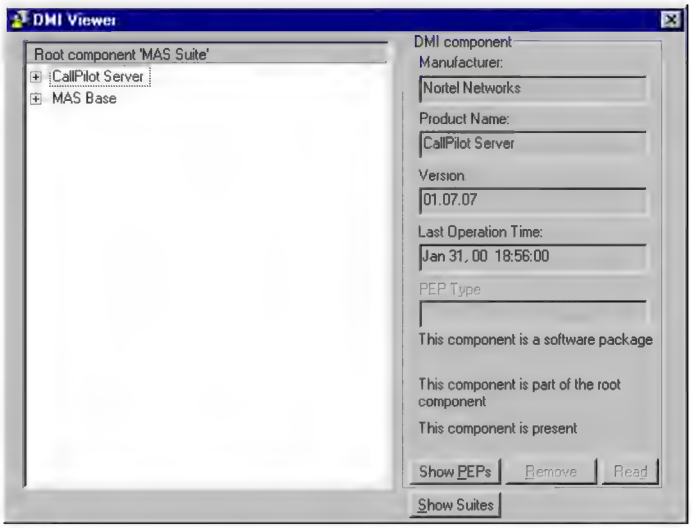
Use the DMI Viewer on the server to view or uninstall server PEPs. Access the DMI Viewer by clicking Start > Programs > CallPilot > System Utilities > PEP Maintenance Utility.

To uninstall PEPs on the server, follow these steps.

1 Log on to the server where you are going to begin the PEP uninstall. Use a logon account that has administrative privileges (for example, administrator).

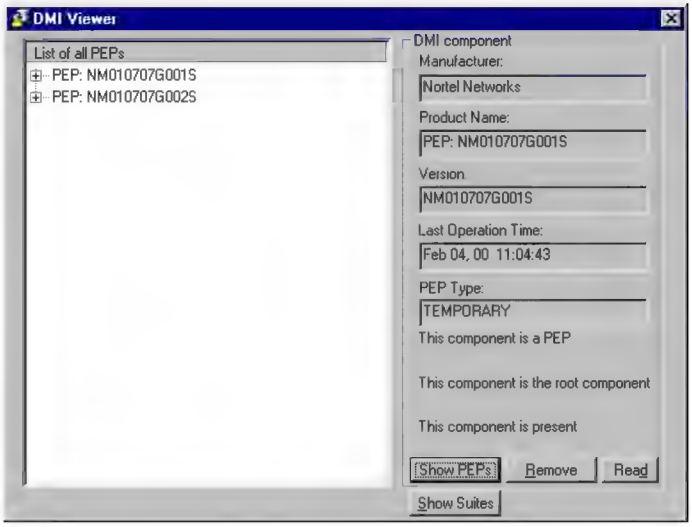
2 Open the PEP Maintenance utility.

Result: The DMI Viewer window appears. The following example might not reflect exactly what appears on your system.



3 To view a list of all PEPs, click Show PEPs.

Result: A list of all PEPs appears.



4 Select the PEP you want to uninstall. You can select multiple PEPs to uninstall in one operation by using the Ctrl key. The prefix PEP identifies PEPs.

5 Click Remove.

Result: The system prompts you to confirm this choice.

6 Click Yes.

Result: The system automatically shuts down all services and uninstalls the selected PEPs. When the uninstall is finished, the system automatically restarts all services.

Note: After you uninstall a PEP, the PEP is still visible in the list of components until you restart DMI Viewer.

7 When you are finished, close the DMI Viewer window.

What's next

If you are installing software for recovery purposes, install switch connectivity software. Go to the section for your switch as shown in the table below.

Switch	Refer to
Meridian 1	Part 3, Chapter 6, "Configuring the server software—common dialog boxes for all switch types"
MSL-100 or DMS-100	"Installing software for the MSL-100/ DMS-100 switch" on page 325
Lucent, Mitel, or Rolm	"Installing software for the Lucent, Mitel, and Rolm switch" on page 312
Matra	Part 3, Chapter 6, "Configuring the server software—common dialog boxes for all switch types"

If you are upgrading CallPilot server software, return to the upgrade procedure described in "Upgrading from 1.0 or 1.06 to 1.07" on page 349.

Section C: Installing switch connectivity software

In this section

Installing software for the Lucent, Mitel, and Rolm switch 312
Installing software for the MSL-100/DMS-100 switch 325

Installing software for the Lucent, Mitel, and Rolm switch

Introduction

Follow these procedures to install and configure connectivity software for the Lucent, Mitel, and Rolm switches.

Note: If you are working on a 702t platform, check your system to make sure IRQ 5 is available for the VTG board. Otherwise you need to reconfigure your hardware to make IRQ available for the VTG board.

To check the IRQ, click Start > Programs > Administrative Tools > Windows NT Diagnostics. Select the Resources tab and confirm that IRQ 5 is not used by any device other than Dialogic.

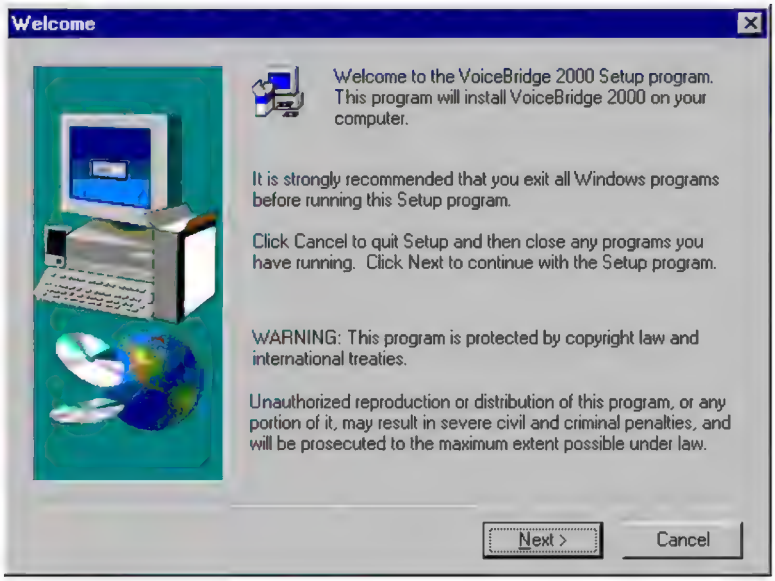
To install VoiceBridge software

1 Insert the CallPilot 1.07 PEP CD into the CD-ROM drive and launch Windows NT Explorer.

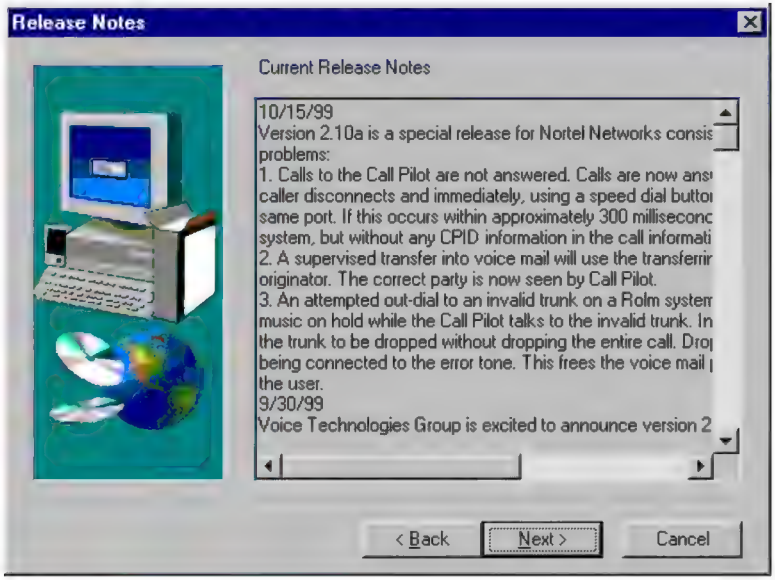
2 Click the CD-ROM drive and navigate to the vtg directory.

3 Double-click setup to start the installation.

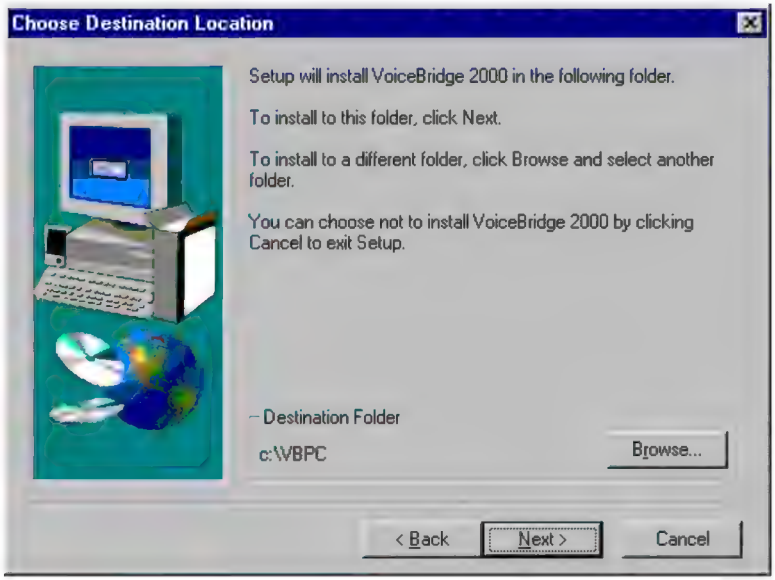
Result: The Welcome window appears.


Welcome
Welcome to the VoiceBridge 2000 Setup program. This program will install VoiceBridge 2000 on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
Next >
Cancel

4 Click Next to display the Release Notes window. Review these notes for the most current information on the release.


Release Notes
Current Release Notes
10/15/99
Version 2.10a is a special release for Nortel Networks consis
problems:
1. Calls to the Call Pilot are not answered. Calls are now ans
caller disconnects and immediately, using a speed dial butto
same port. If this occurs within approximately 300 milliseconc
system, but without any CPID information in the call informati
2. A supervised transfer into voice mail will use the transferrir
originator. The correct party is now seen by Call Pilot.
3. An attempted out-dial to an invalid trunk on a Rolm systen
music on hold while the Call Pilot talks to the invalid trunk. In
the trunk to be dropped without dropping the entire call. Dro
being connected to the error tone. This frees the voice mail
the user.
9/30/99
Voice Technologies Group is excited to announce version 2
< Back
Next >
Cancel

5 Click Next to display the Choose Destination Location window.

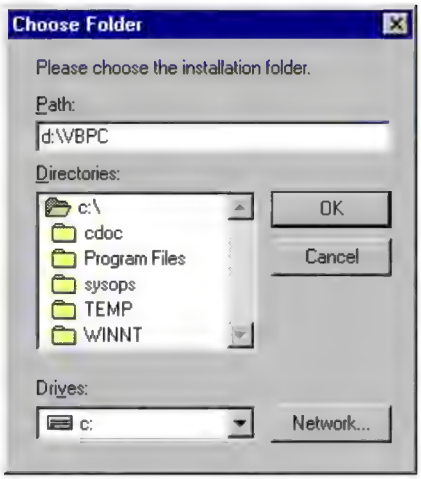

Choose Destination Location
Setup will install VoiceBridge 2000 in the following folder.
To install to this folder, click Next.
To install to a different folder, click Browse and select another folder.
You can choose not to install VoiceBridge 2000 by clicking Cancel to exit Setup.
Destination Folder
c:\VBPC
Browse...
< Back
Next >
Cancel

6 Change the VoiceBridge software destination folder:

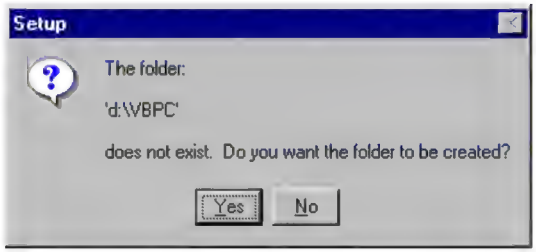
a. Click Browse... to display the Choose Folder dialog box.

b. Change the destination folder to d:\vbpc by typing the pathname in the Path field.

c. Click OK.

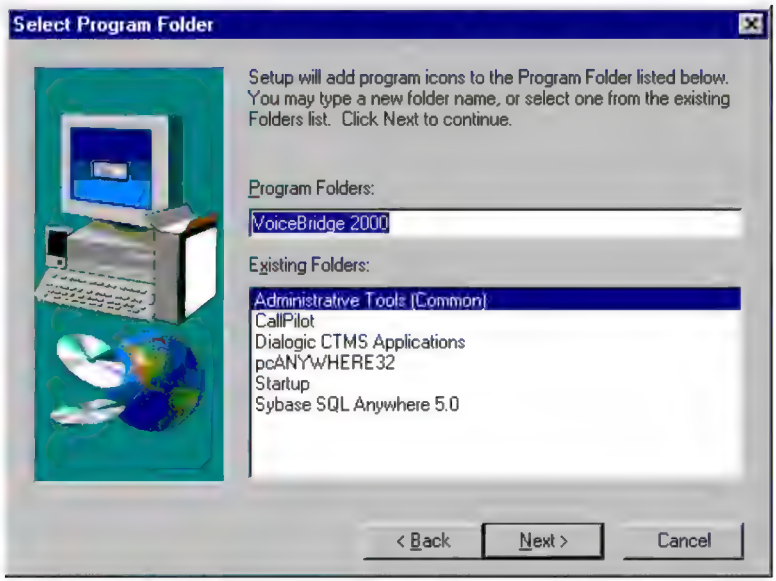


d. On the Setup window, click Yes to confirm the change.



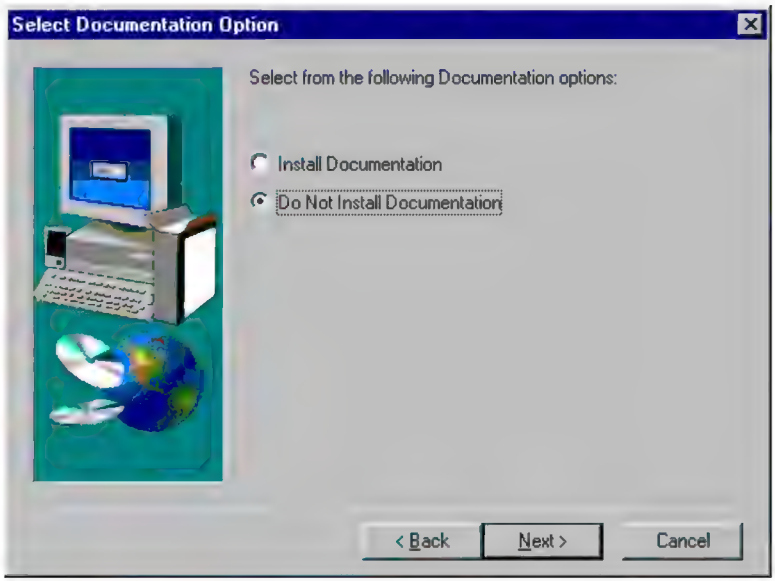
Result: The Choose Destination Location window appears.

7 Click Next to display the Select Program Folder window. Accept the default program folder name.

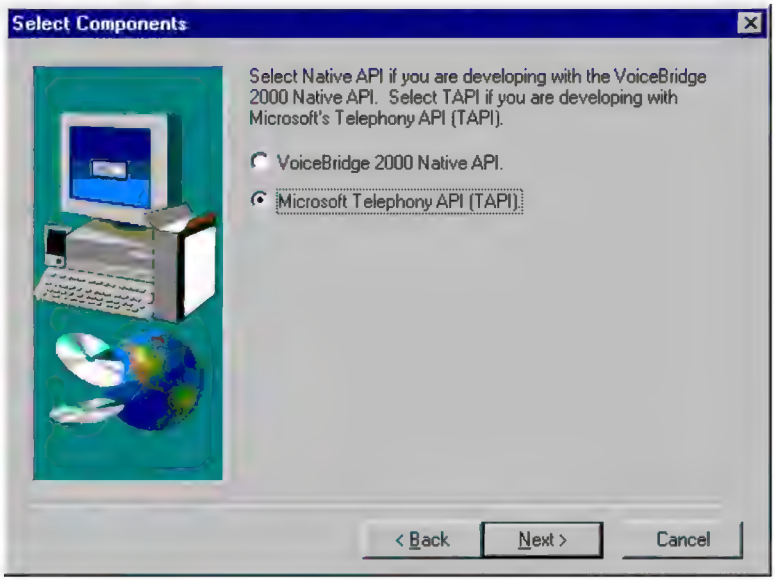

Select Program Folder
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing Folders list. Click Next to continue.
Program Folders:
VoiceBridge 2000
Existing Folders:
Administrative Tools (Common)
CallPilot
Dialogic CTMS Applications
pcANYWHERE32
Startup
Sybase SQL Anywhere 5.0
< Back
Next >
Cancel

8 Click Next to display the Select Documentation Option window.

9 Select Install Documentation.

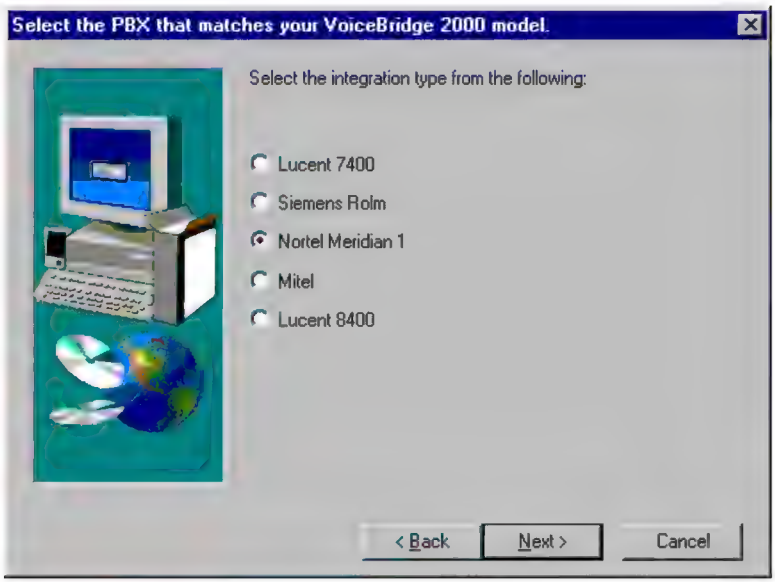


10 Click Next to display the Select Components window.


Select Components
Select Native API if you are developing with the VoiceBridge 2000 Native API. Select TAPI if you are developing with Microsoft's Telephony API (TAPI).
VoiceBridge 2000 Native API.
Microsoft Telephony API (TAPI).
< Back
Next >
Cancel

11 Select Microsoft Telephony API (TAPI).

12 Click Next to display the PBX selection window.

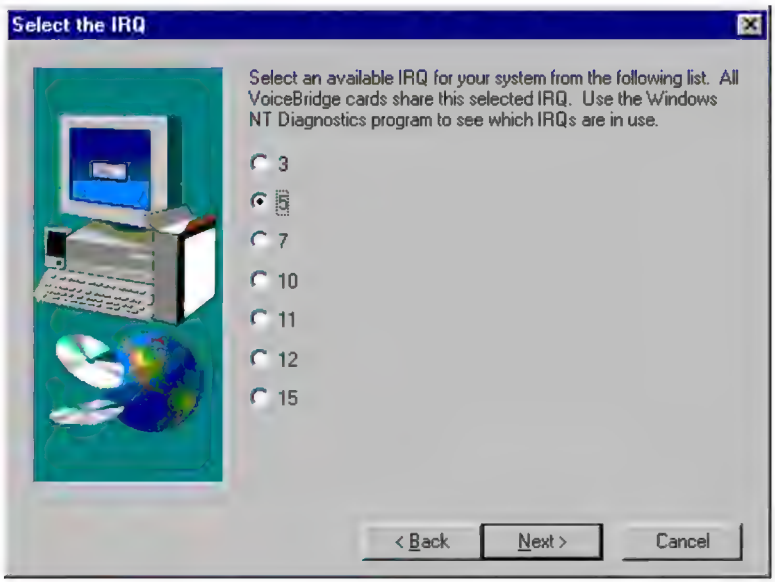


13 When Setup prompts you to select the switch type

- for Rolm, select Siemens Rolm
- for M1-DSE, select Nortel Meridian 1
- for Mitel, select Mitel
- for Lucent 2-wire, select Lucent-8400

Note: Lucent-7400 is not supported.

14 Click Next to display the Select the IRQ window.


Select the IRQ
Select an available IRQ for your system from the following list. All VoiceBridge cards share this selected IRQ. Use the Windows NT Diagnostics program to see which IRQs are in use.
3
5
7
10
11
12
15
< Back
Next >
Cancel

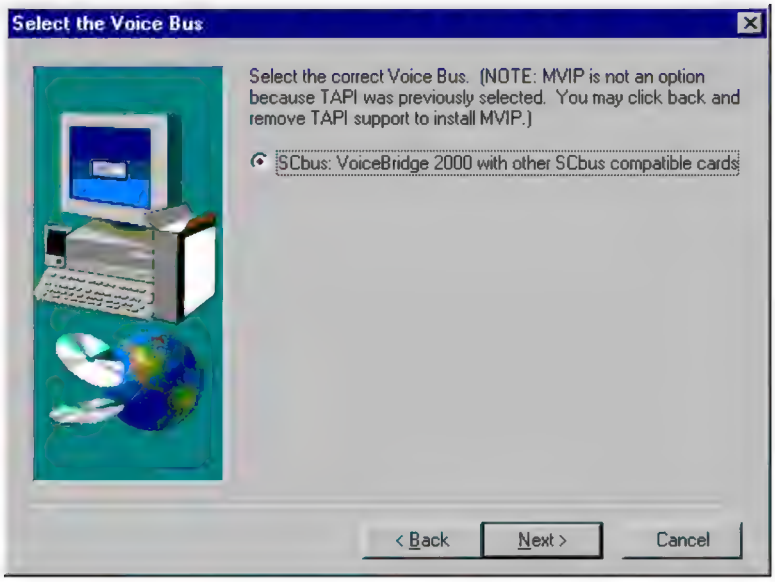
Note:

- Make sure the IRQ 5 is available for the VTG board and is not used by any other device. Otherwise, you must reconfigure your hardware to make IRQ 5 available for the VTG board.

  To check the IRQ, click Start > Programs > Administrative Tools > Windows NT Diagnostics. Select the Resources tab and confirm that IRQ 5 is not used by any device other than Dialogic.

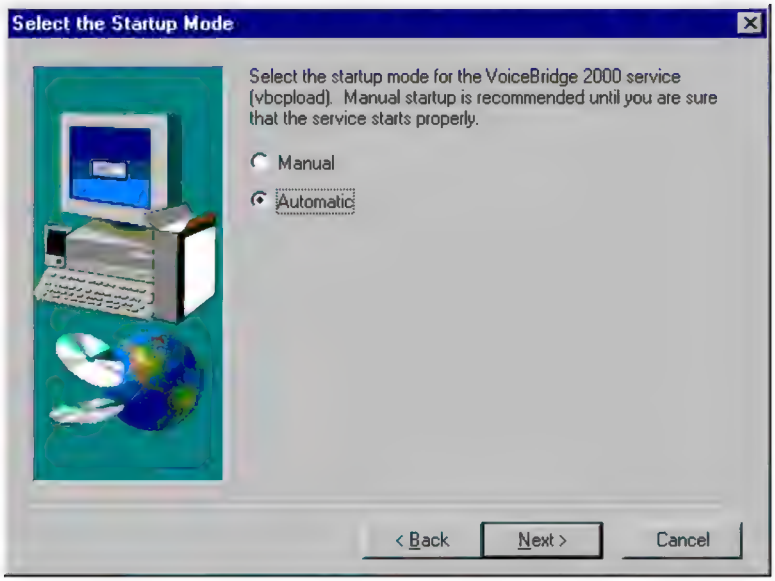
15 Select IRQ 5.

16 Click Next to display the Select the Voice Bus window.


Select the Voice Bus
Select the correct Voice Bus. (NOTE: MVIP is not an option because TAPI was previously selected. You may click back and remove TAPI support to install MVIP.)
SCbus: VoiceBridge 2000 with other SCbus compatible cards
< Back
Next >
Cancel

17 Select the SCbus: VoiceBridge 2000 with other SCbus compatible cards option.

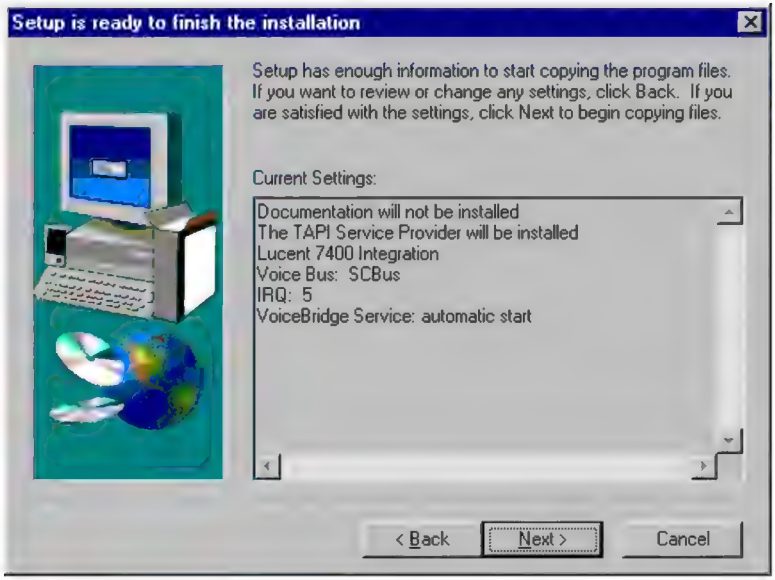
18 Click Next to display the Startup Mode selection window.


Select the Startup Mode
Select the startup mode for the VoiceBridge 2000 service (vbcpload). Manual startup is recommended until you are sure that the service starts properly.
Manual
Automatic
< Back
Next >
Cancel

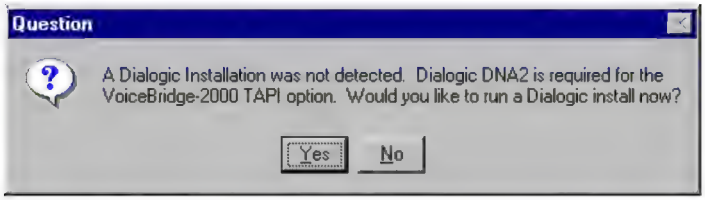
19 Select Automatic startup mode for VBPC load.

20 Click Next to display the Setup finish window.

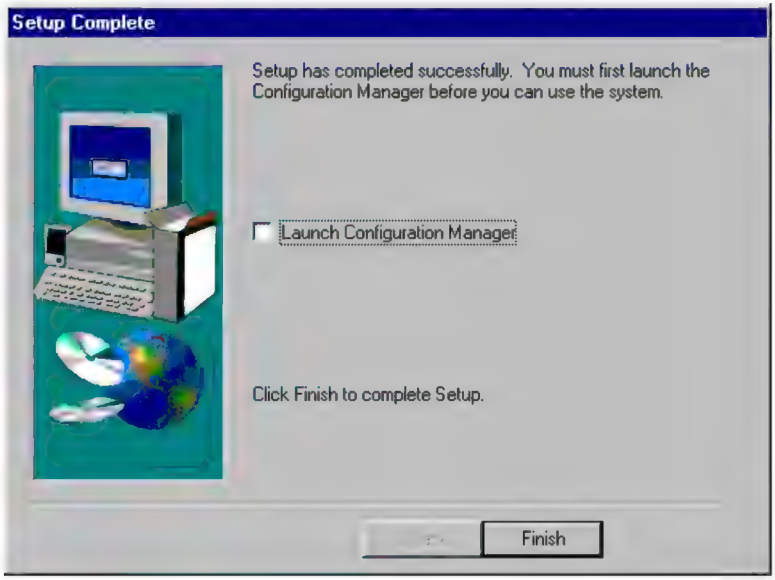
21 Review the Current Settings list. Click Back to redisplay any window on which you want to make changes, or click Next to continue.


Setup is ready to finish the installation
Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.
Current Settings:
Documentation will not be installed
The TAPI Service Provider will be installed
Lucent 7400 Integration
Voice Bus: SCBus
IRQ: 5
VoiceBridge Service: automatic start
< Back
Next >
Cancel

22 The Setup process displays a pop-up window that asks about Dialogic Installation. Click No.


Question
A Dialogic Installation was not detected. Dialogic DNA2 is required for the VoiceBridge-2000 TAPI option. Would you like to run a Dialogic install now?
Yes
No

Result: The Setup Complete window appears.

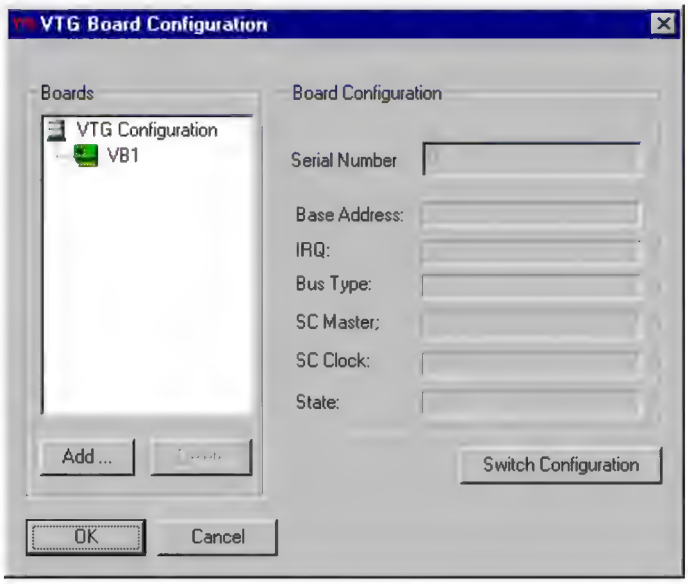

Setup Complete
Setup has completed successfully. You must first launch the Configuration Manager before you can use the system.
Launch Configuration Manager
Click Finish to complete Setup.
Finish

23 Uncheck Launch Configuration Manager, and click Finish.

To run VTG configuration

24 After VTG software installation is finished, from the d:\nortel\bin directory, double-click vtgconfiguration.exe.

25 In the VTG Boards area, click VB1 to highlight it. Click Delete to remove it.

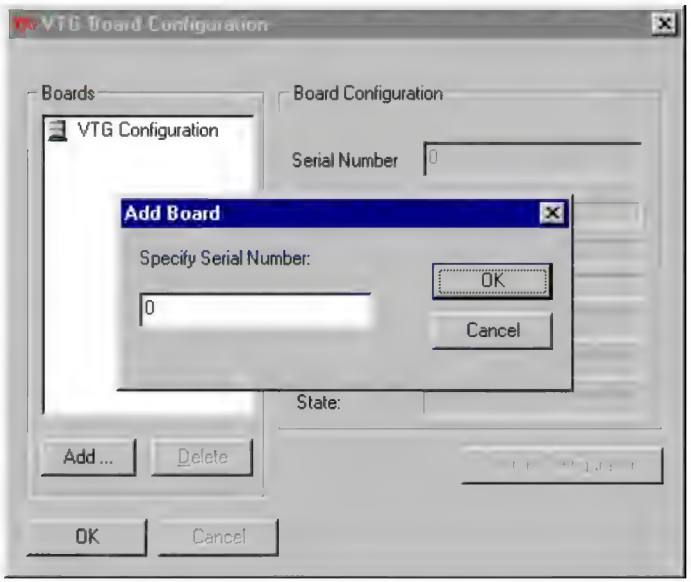


26 Click Add to display the Add Board dialog box.

27 Enter the serial number of the VTG board, and then click OK.

Note: If there are multiple VTG boards, it is important that you enter the serial numbers according to the location of the ISA slots. Refer to Chapter

6, "Performing hardware maintenance" for more information on the location of the ISA slots.



ATTENTION

You can find the VTG board serial number on a sticker on the backplate of the switch.

28 Continue adding boards one by one.

29 After all VTG boards are added, click OK to close the VTG configuration.

30 Restart the server.

What's next

Run the Configuration Wizard by selecting Start > Programs > CallPilot > Configuration Wizard.

Refer to Part 3, Chapter 6, "Configuring the server software—common dialog boxes for all switch types" for more information on running the Configuration Wizard.

Installing software for the MSL-100/DMS-100 switch

Introduction

Follow these procedures to install and configure software for the MSL-100/DMS-100 switch.

Requirements

- CallPilot 1.07 PEP CD

To install Dialogic software

1. Insert the CallPilot 1.07 PEP CD into the CD-ROM drive and launch Windows NT Explorer.
2. Click the CD-ROM drive and navigate to the dialogic\dna3.1 directory.
3. Double-click Setup to start the Dialogic software installation.

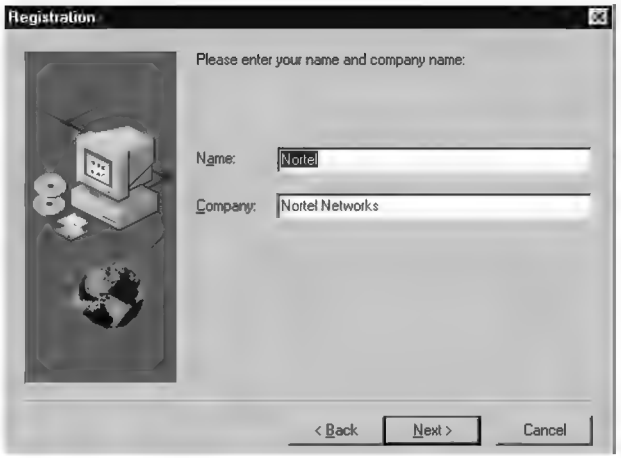
   Result: Dialogic setup initializes the system to install the Dialogic software.

Dialogic
System Software and SDK
for Windows NT
Copyright © 1998 Dialogic Corporation
Setup
Setup is preparing the InstallShield Wizard which will guide you through the rest of the setup process. Please wait.
77 %

4 The system displays the Welcome to Dialogic Setup window.

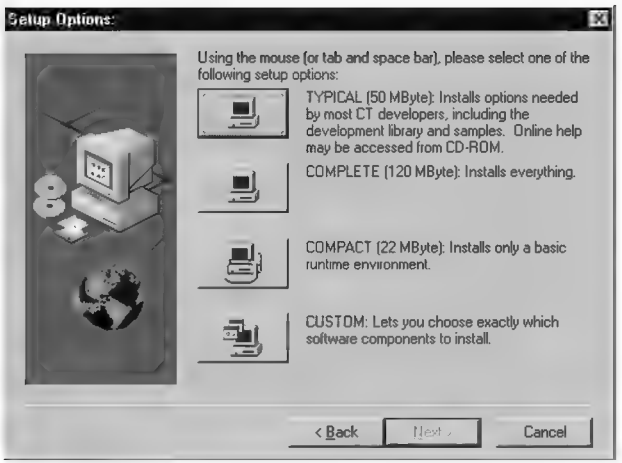
This program will install Dialogic System Software SDK for Windows NT DNA Version 3.1 onto your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
Next >
Cancel

5 Click Next to display the Registration Window.

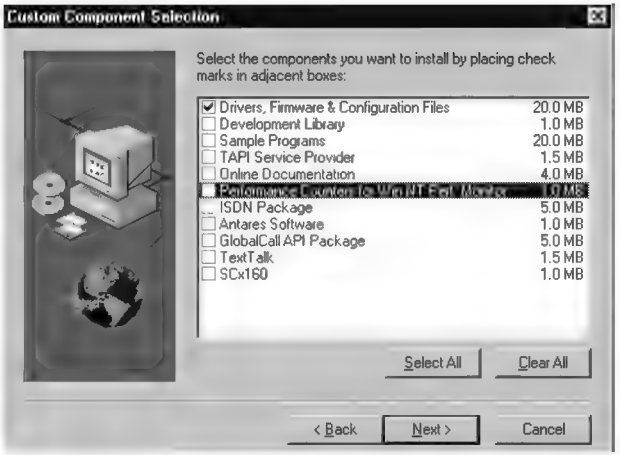


6 Enter the User name and Company name, and click Next to display the Setup Options window.

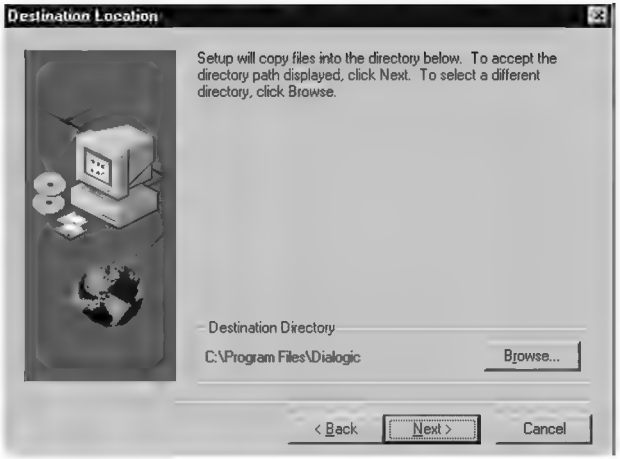
Note: Use the User name and Company name you entered during the installation of Windows NT.


Setup Options:
Using the mouse (or tab and space bar), please select one of the following setup options:
TYPICAL (50 MByte): Installs options needed by most CT developers, including the development library and samples. Online help may be accessed from CD-ROM.
COMPLETE (120 MByte): Installs everything.
COMPACT (22 MByte): Installs only a basic runtime environment.
CUSTOM: Lets you choose exactly which software components to install.
< Back
Next >
Cancel

7 Select the Custom option, and click Next to display the Custom Component Selection panel.


Custom Component Selection
Select the components you want to install by placing check marks in adjacent boxes:
Drivers, Firmware & Configuration Files 20.0 MB
Development Library 1.0 MB
Sample Programs 20.0 MB
TAPI Service Provider 1.5 MB
Online Documentation 4.0 MB
ISDN Package 5.0 MB
Antares Software 1.0 MB
GlobalCall API Package 5.0 MB
TextTalk 1.5 MB
SCx160 1.0 MB
Select All
Clear All
< Back
Next >
Cancel

8 Select the Drivers, Firmware and Configuration Files option. Click Next to display the Destination Location panel.

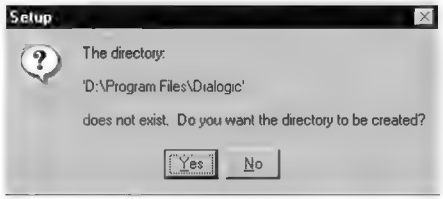

Destination Location
Setup will copy files into the directory below. To accept the directory path displayed, click Next. To select a different directory, click Browse.
Destination Directory
C:\Program Files\Dialogic
Browse...
< Back
Next >
Cancel

9 Click Browse to create a directory where the setup process will copy files.

Result: The Choose Directory dialog box appears.

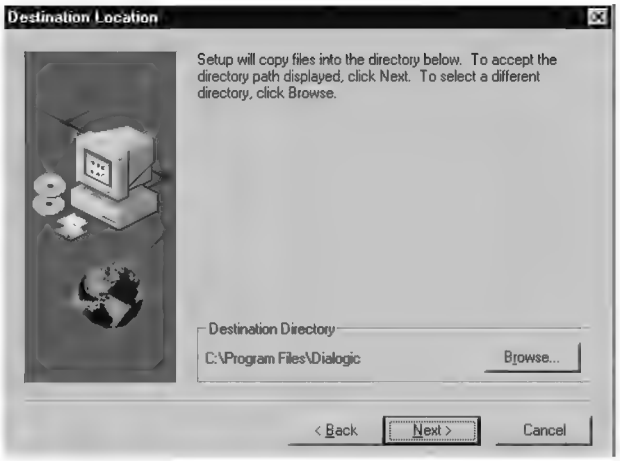
10 In the Path box, enter d:\Program Files\Dialogic. Click OK.

Result: You are asked if you want to create the directory.

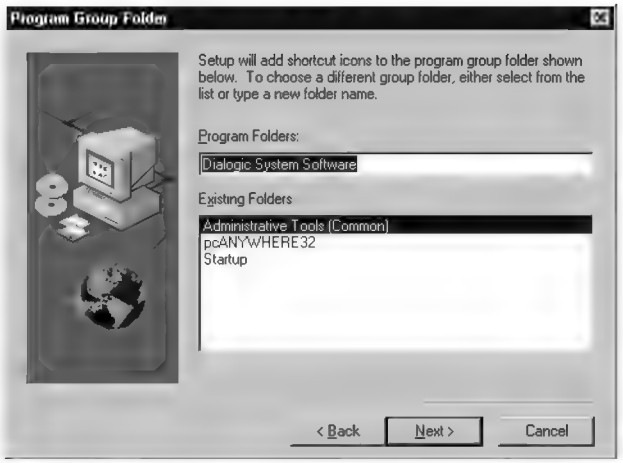


11 Click Yes.

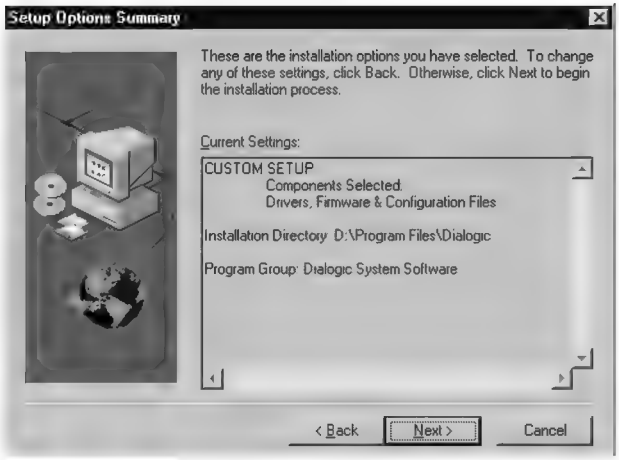
Result: The Destination Location panel redisplays, showing the new directory.


Destination Location
Setup will copy files into the directory below. To accept the directory path displayed, click Next. To select a different directory, click Browse.
Destination Directory
C:\Program Files\Dialogic
Browse...
< Back
Next >
Cancel

12 Click Next to display the Program Group Folder panel.


Program Group Folder
Setup will add shortcut icons to the program group folder shown below. To choose a different group folder, either select from the list or type a new folder name.
Program Folders:
Dialogic System Software
Existing Folders
Administrative Tools (Common)
pcANYWHERE32
Startup
< Back
Next >
Cancel

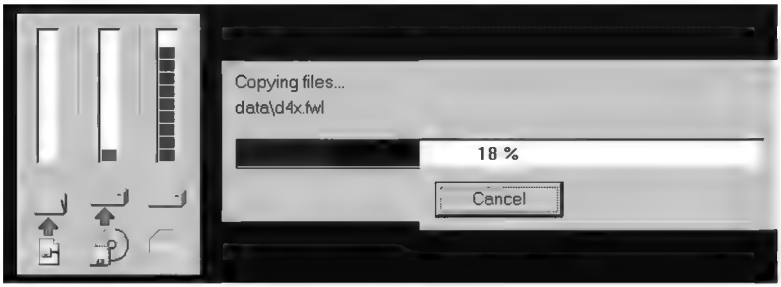
13 Click Next to accept the default values and to display the Setup Options Summary panel.


Setup Options Summary
These are the installation options you have selected. To change any of these settings, click Back. Otherwise, click Next to begin the installation process.
Current Settings:
CUSTOM SETUP
Components Selected:
Drivers, Firmware & Configuration Files
Installation Directory: D:\Program Files\Dialogic
Program Group: Dialogic System Software
< Back
Next >
Cancel

14 Click the Current Settings or Back to make changes.

15 Click Next to begin installation.

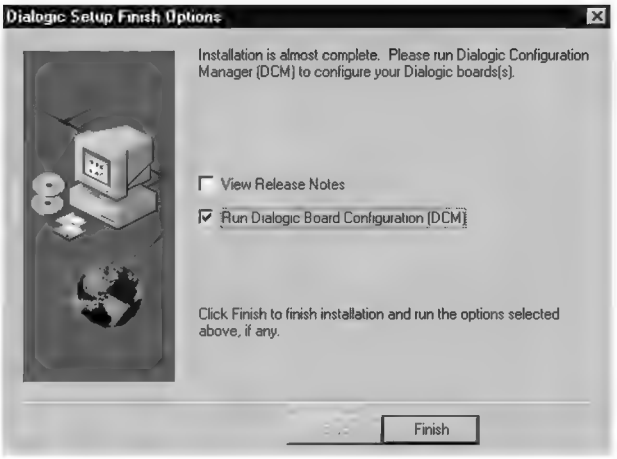
Result: The copying status window appears.



Once the files are copied, the Dialogic Setup Finish Options panel appears.

16 Deselect the View Release Notes item. Select the Run Dialogic Board Configuration (DCM) item.

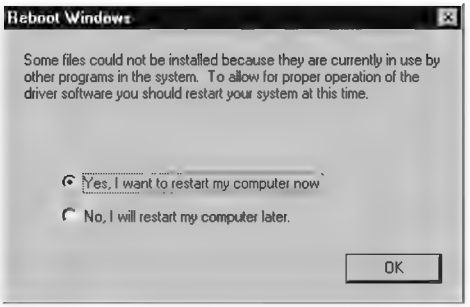
17 Click Finish.


Dialogic Setup Finish Options
Installation is almost complete. Please run Dialogic Configuration Manager (DCM) to configure your Dialogic boards(s).
View Release Notes
Run Dialogic Board Configuration (DCM)
Click Finish to finish installation and run the options selected above, if any.
Finish

Result: You are asked if you would like to install GammaLink fax.

18 Click No.

Result: The Reboot Windows dialog box appears.


Reboot Windows
Some files could not be installed because they are currently in use by other programs in the system. To allow for proper operation of the driver software you should restart your system at this time.
Yes, I want to restart my computer now
No, I will restart my computer later.
OK

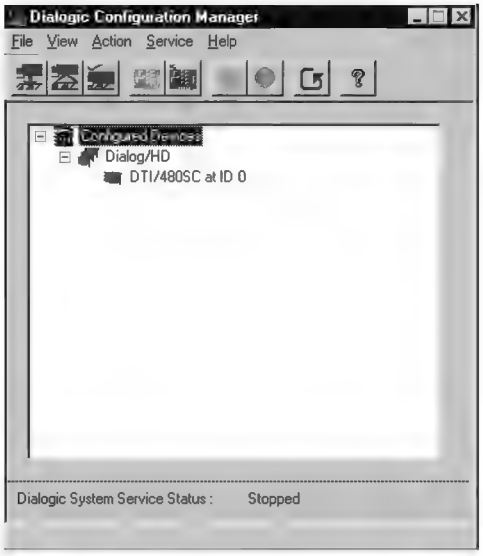
19 Click No, I will restart my computer later.

Result: An information window appears showing setup is complete.

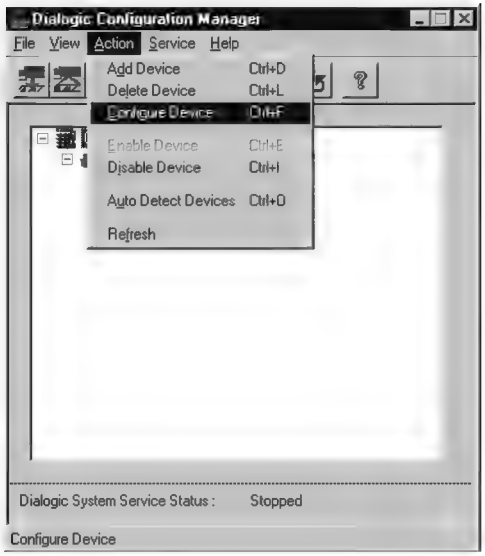
To configure Dialogic software

20 Click OK to configure the Dialogic software.

Result: The Dialogic Configuration Manager window appears.



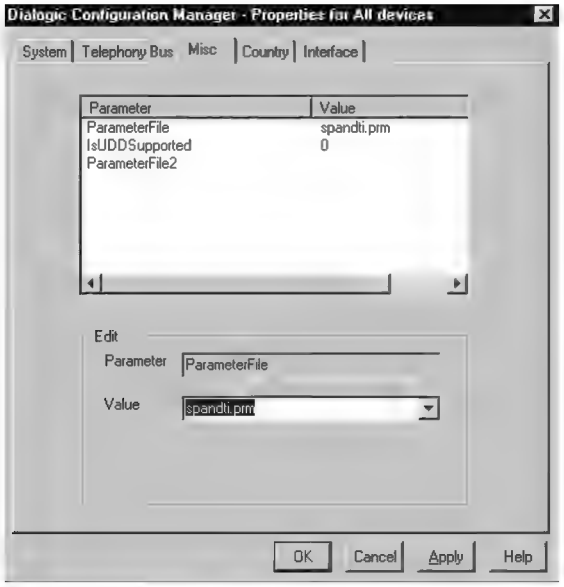
21 From the Dialog Configuration Manager menu, select Action > Configure Device to configure the Dialogic board.



Result: The Dialogic Configuration Manager - Properties for All devices window appears.

22 Select the Telephony Bus tab. Highlight the parameter SCbusClockMasterSource, and edit it to have the Independent value.

23 Select the Misc tab. Highlight ParameterFile, and edit it to have the spandti.prm value.



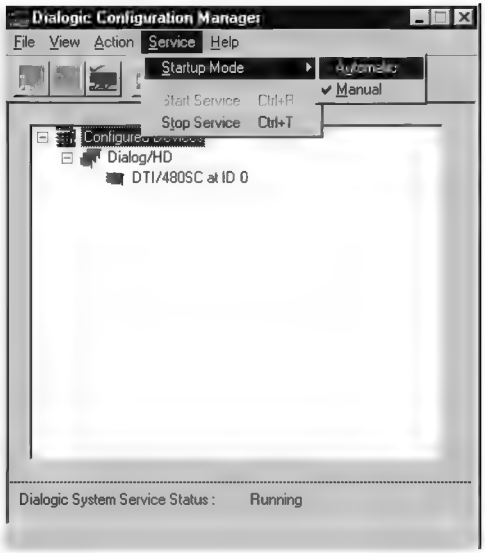
24 Click OK to apply these changes and close the window.

Click Cancel to exit the window without applying the changes.

Click Apply to apply the changes without closing the window. You might select another tab to make changes.

Result: You are returned to the Dialogic Configuration Manager window.

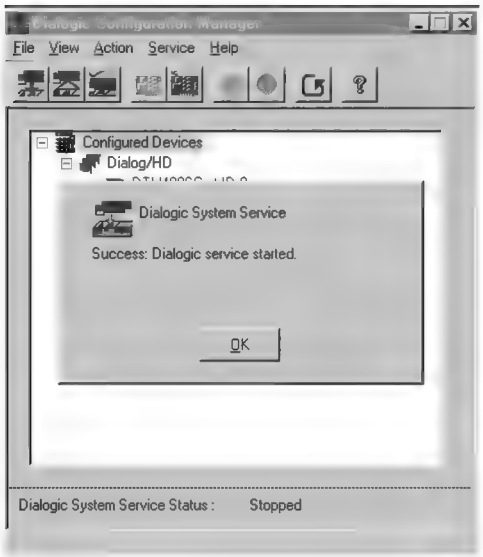
25 Change the startup mode to automatic by selecting Service > Startup Mode > Automatic.



Result: The Start Service menu option activates.

26 Select the Start Service menu option.

Result: The Dialogic System Service pop-up window appears.



27 Click OK to close the pop-up window.

28 Click File > Exit to exit the Dialogic Configuration Manager.

29 Remove the PEP CD from the CD-ROM drive.

30 Start to configure CallPilot by running the Configuration Wizard.

What's next

Run the Configuration Wizard by clicking Start > Programs > CallPilot > Configuration Wizard.

For more information on running the Configuration Wizard, refer to Part 3, Chapter 6, "Configuring the server software—common dialog boxes for all switch types".

Chapter 9

Upgrading CallPilot server software

In this chapter

Pre-upgrade checklist 340

Preparing for the upgrade 345

Upgrading from 1.0 or 1.06 to 1.07 349

Pre-upgrade checklist

Introduction

This section provides an upgrade readiness checklist that should be performed before attempting the upgrade at the customer site. This enables you to

- avoid significant lost time and costs
- significantly reduce system downtime resulting from upgrade problems that might have been prevented.

A summary of the upgrade readiness checks includes the following steps:

- Ensure dial-up networking can be established with the CallPilot server.
- Ensure a pcANYWHERE32 session can be established with the CallPilot server.
- Ensure the MMFS is less than 90 percent full.
- Check if the customer has recorded customized prompts.
- Check Meridian 1 for required software, feature packages, and patches.
- Check system information, such as keycode and serial number.
- Check for "critical" PEPs that have been issued since the release of the last 1.07 build.

If one of these readiness checks fails, the failure should be corrected before attempting the upgrade again. Details of the readiness checks follow.

To ensure a dial-up networking session can be established with CallPilot

If the PC is not on an IP network connected to the CallPilot server, establish a connection using Dial-Up Networking.

1 Click Start > Programs > Accessories > Dial-Up Networking.

2 Double-click the MAS icon.

If the icon is unavailable, create a MAS connection profile. See "Creating the MAS connection profile" on page 470 of the *CallPilot 1.0 Maintenance and Diagnostics Guide*.

3 When prompted, enter the Windows NT logon ID and password.

4 Wait until the connection is established.

To ensure a pcANYWHERE32 session can be established with CallPilot

If pcANYWHERE32 is not functioning prior to the upgrade, the upgrade will not change this. If the upgrade is performed and a problem occurs, remote support access is not possible.

Do not attempt an upgrade to 1.07 until pcANYWHERE32 is functioning.

Given a dial-up networking session has been established, establish a pcANYWHERE32 connection to the CallPilot server:

1 Click Start > Programs > pcANYWHERE32 > pcANYWHERE.

2 Double-click the remote control icon for the server.

3 If the icon is unavailable, create a server connection profile. See "To create a remote control connection icon" on page 470 of the *CallPilot 1.0 Maintenance and Diagnostics Guide*.

4 When prompted, enter the pcANYWHERE32 logon ID and password.

If a pcANYWHERE32 session can not be established, open a ticket with Nortel Networks CTS. You require pcANYWHERE32 access for remote support.

Ensure MMFS volume on Disk 1 is less than 90 percent full

Use the administrative client to check that the MMFS volume on Disk 1 (drive D) is less than 90 percent full. Do not proceed with the upgrade if the MMFS volume on Disk 1 (drive D) is greater than 90 percent full.

If the MMFS volume is greater than 90 percent full, then the upgrade of the system to the latest release of the voice prompts might fail.

To find out how much space is used on each volume, perform the following steps:

1 On the Administrative client, select SMI > System Administration > System Performance Monitoring. Double-click "Reporter Download Schedule."

Result: The system displays the "Select the drive for the local OM database" dialog box.

2 Click OK to continue.

3 From the Reporter Download Schedule window, press Download Now.

Note: If Nortel Communicator is not running, you are prompted to start the Communicator. Click Yes to continue.

4 Select an interval for the OM collection period and click OK. A smaller interval downloads more quickly.

Result: The system downloads the Operational Measurements data from the server to the client PC.

5 When the OM download is complete, click Save.

6 To run the system reports, select Start > Programs > MAS Reporter > Reports. The default password for Reporter is "password." You might need to change the password if you have not already done so.

7 Select your system name > Reports. Double-click the System folder and double-click Multimedia File System Usage Monitor Report.

8 Specify an interval.

9 Click OK.

Result: A report appears that shows the amount of text and voice space used for each of the volumes on the system.

10 Exit Reporter.

Check if custom prompts have been recorded

Use the administrative client to check if custom prompts have been recorded.

View the prompts in the System Prompts Customization main window by selecting one of the following paths.

For 1.0 systems

Nortel SMI > Meridian Application Server > CallPilot > System Prompts Customization.

For 1.06 systems

Nortel SMI > Meridian Application Server > Messaging > System Prompts Customization.

If one or more prompts are custom, then archive the custom prompts by selecting one of the following paths:

For 1.0 systems

Nortel SMI > Meridian Application Server > CallPilot > Archive & Restore > Archive Manager

For 1.06 systems

Nortel SMI > Meridian Application Server > Messaging > Archive & Restore > Archive Manager

After the upgrade to 1.07, the custom prompts can be restored on the system from the archived copy.

Ensure the Meridian 1 switch has required patches

Check the Meridian 1 patches against the requirements stated in Part 3, Chapter 3. If the required patches are not present on the Meridian 1, do not proceed with an upgrade until the Meridian 1 switch is ready. Without the required patches on the Meridian 1, ring-no-answer and other issues can result.

Checking system information

To locate information about your system that you might need for the upgrade, click Start > Programs > CallPilot 1.0 (or 1.06) Server > CallPilot System Information. Ensure that the

- Security Device ID (Sec. Dev. ID) on the 1.07 keycode label matches the CallPilot serial number that appears on the CallPilot System Information dialog box. If these two items do not match, your Nortel Networks customer support representative must generate a new keycode so you can upgrade your system.
- Feature limits displayed on the 1.07 keycode label are greater than or equal to the feature limits displayed on the CallPilot System Information dialog box.

Features cannot be reduced. For example, if you currently have three voice prompt languages installed on your system, you cannot reduce the number of languages to two.

Check for critical PEPs that have been issued since 1.07 was released

Check the NIC web site at http://www.nortelnetworks.com/prd/nic (Products > CallPilot) for any additional PEPs that might have been made available since the manufacture of the PEP CD. If critical PEPs are available, apply them immediately after installing the PEPs from the PEP CD.

Note: The NIC web site is a secure site and requires a user name and a password to log on. If you do not currently have an account, you must apply for one prior to entry. Be advised it might take three to five business days for your account request to be processed.

Preparing for the upgrade

Introduction

Use the procedures in this section to upgrade to a new release of CallPilot software. To upgrade you must replace the CallPilot software with a higher numbered release.

You can upgrade

- from a previous release (1.0 or 1.06)
- from a previous release (1.0 or 1.06) after performing an expansion
- from a previous release (1.0 or 1.06) at the same time as performing an expansion

Note: You cannot downgrade to a previous version of CallPilot software.

Timing

The upgrade process takes approximately 60 minutes.

Requirements

- a 1.07 keycode
- CallPilot 1.07 Server CD
- CallPilot 1.07 PEP CD
- CallPilot 1.07 Language CD
- a copy of the latest General Release Bulletin (GRB). It is important that you review this document for special instructions before starting the upgrade.
- a CallPilot mailbox, a phoneset, and the phone number of the customer's IVF Messaging application to check that CallPilot is operational after the upgrade
- if the customer has the fax or speech recognition options, a fax machine and the phone numbers for Express Fax Messaging and/or Speech Activated Messaging

Upgrade checklist

Step	✔
Review the pre-upgrade checklist on page 340.	
Disable all DSP and DS30 channels. Refer to "To disable all DSP and DS30 channels from the Administrative PC" on page 347 for more information on performing this step.	
Have on hand a 1.07 keycode and serial number. Check that the keycode and serial number are valid by following the steps listed in "Checking system information" on page 343.	
Obtain the current password for the Administrator or NGenSys account. If you are unfamiliar with these passwords, contact the company's network administrator.	
Start services. See "To start services" below for more information.	
Perform a full backup. See *Monitoring and Security for the Administrator.*	

Before you begin

Check that all services starting with the prefix MAS and CallPilot (MCE) are up and running before starting the upgrade.

To start services

1 Click Start > Settings > Control Panel > Services.

2 Select the MAS and CallPilot (MCE) services that have not been started.

3 Check that the startup states are set to Automatic.

4 Click OK to confirm.

5 Exit the Services application.

To disable all DSP and DS30 channels from the Administrative PC

Before upgrading the server, disable the DSP and DS30 channels and then shut down the Administrative PC.

1 From the Administrative PC, click Start > Programs > CallPilot Administration Client.

Result: An Explorer window appears.

2 Click your server icon.

Result: The SMI Login screen appears.

3 Enter your user ID and password, and then click OK.

4 From the Administration Menu, select System Administration > Maintenance Administration.

5 Double-click the Channel Monitor option.

Result: The DS30 channels appear.

6 Highlight the channel by clicking the DS30 channel entry.

7 From the File menu, select Courtesy Stop.

Result: The highlighted DS30 channel changes to off-duty status and becomes disabled.

8 Double-click the Multimedia Monitor option.

Result: The DSP channels appear.

9 Highlight the channel by clicking the DSP channel entry.

10 From the File menu, select Courtesy Stop.

Result: The highlighted DSP channel changes to off-duty status and become disabled.

11 After disabling all DSP channels, dial in to CallPilot to test that the lines are disabled. You should receive a busy signal.

12 Shut down the Administrative PC.

If you upgrade from a networked CD

If you perform an upgrade from a networked CD, the machine that serves the CD must have Windows NT 4.0 (Server or Workstation) and be accessible over the LAN.

To reassign the drives

If the CD-ROM is mapped as drive E:, you need to reassign the drives.

1 Click Start > Programs > Administrative Tools (Common) > Disk Administrator.

2 Select the CD-ROM drive.

3 On the Tools menu, select Assign Drive Letter.

4 Click the option button for Assign Drive Letter and select Z: from the drop-down list.

5 Click OK.

Result: Setup prompts you to confirm the change.

6 Click Yes to confirm. The new drive assignment occurs immediately.

7 Select the second hard drive (currently drive F:) and change its drive to E:.

To prepare a keycode file

You require a new keycode to upgrade your CallPilot system. This keycode should be different than the keycode supplied with your initial CallPilot system.

You can either manually enter the keycode or read it from a file.

1 Open a document in a text-editing application (such as Notepad). The keycode is supplied by Nortel Networks, and consists of 7 sets of 4 alphanumeric characters.

2 Type the keycode into the file, placing a space between each set of characters.

3 Save the file as a *.kc document.

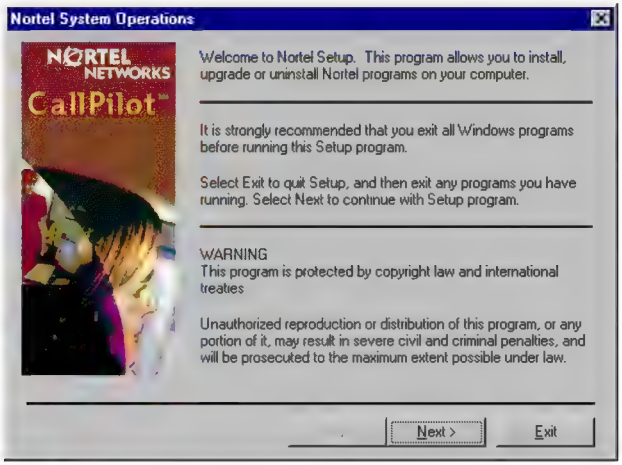
Upgrading from 1.0 or 1.06 to 1.07

To upgrade to a newer release

1. Log on to the server using an account with local administrative privileges (for example, Administrator or NGenSys).
2. Close all applications except for pcANYWHERE32, acdproxy, Sybase, and the MASTraceWindow.
3. Disable all DSP and DS30 channels using the administrative PC. Refer to "To disable all DSP and DS30 channels from the Administrative PC" on page 347 for instructions on how to stop these channels.
4. If you are upgrading from 1.0, install Service Pack 5 before starting the upgrade. Refer to "Installing WinNT 4.0 Service Pack 5" on page 262.
5. Insert the 1.07 Server CD in the CD drive.
6. From the Windows taskbar, click Start > Run.
7. Click Browse.

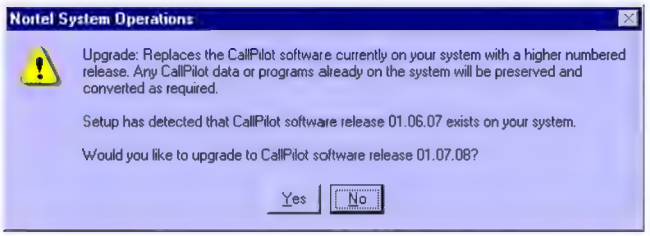
   Result: A Browse window appears.
8. Select the CD-ROM drive and double-click setup.exe.
9. Click OK from the Run window.

   Result: The Nortel System Operation window appears.


Nortel System Operations
NORTEL NETWORKS
CallPilot
Welcome to Nortel Setup. This program allows you to install, upgrade or uninstall Nortel programs on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Select Exit to quit Setup, and then exit any programs you have running. Select Next to continue with Setup program.
WARNING
This program is protected by copyright law and international treaties
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
Next >
Exit

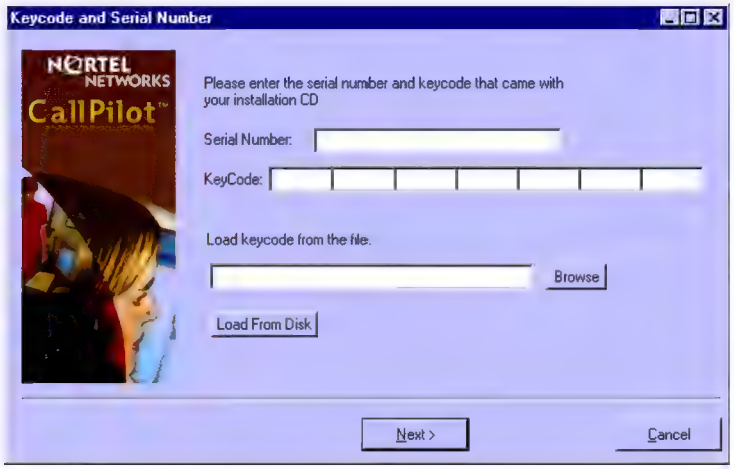
10 Click Next to continue with upgrade.

Result: Setup examines the system and then prompts you to confirm the upgrade.


Nortel System Operations
Upgrade: Replaces the CallPilot software currently on your system with a higher numbered release. Any CallPilot data or programs already on the system will be preserved and converted as required.
Setup has detected that CallPilot software release 01.06.07 exists on your system.
Would you like to upgrade to CallPilot software release 01.07.08?
Yes
No

11 Click Yes to start the upgrade.

Result: The Keycode and Serial Number window appears.

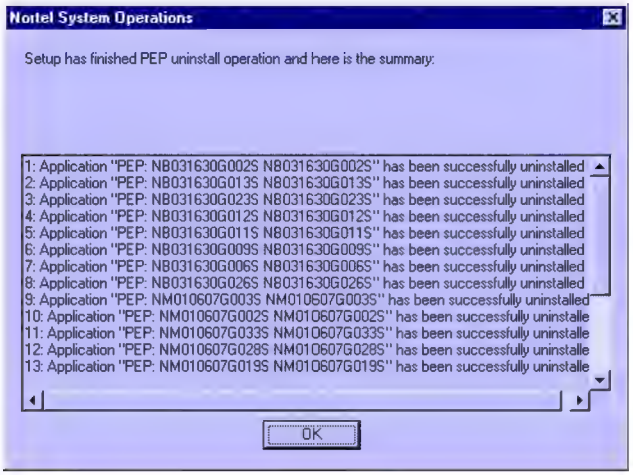


12 Enter the new 1.07 keycode, and then click Next.

Result: The Features Verification window appears.

13 Click Next.

Result: Setup automatically uninstalls previous PEPs as part of the upgrade procedure. After all PEPs have been uninstalled, a dialog box appears showing the PEPs that have been uninstalled.


Nortel System Operations
Setup has finished PEP uninstall operation and here is the summary:
1: Application "PEP: NB031630G002S NB031630G002S" has been successfully uninstalled
2: Application "PEP: NB031630G013S NB031630G013S" has been successfully uninstalled
3: Application "PEP: NB031630G023S NB031630G023S" has been successfully uninstalled
4: Application "PEP: NB031630G012S NB031630G012S" has been successfully uninstalled
5: Application "PEP: NB031630G011S NB031630G011S" has been successfully uninstalled
6: Application "PEP: NB031630G009S NB031630G009S" has been successfully uninstalled
7: Application "PEP: NB031630G006S NB031630G006S" has been successfully uninstalled
8: Application "PEP: NB031630G026S NB031630G026S" has been successfully uninstalled
9: Application "PEP: NM010607G003S NM010607G003S" has been successfully uninstalled
10: Application "PEP: NM010607G002S NM010607G002S" has been successfully uninstalle
11: Application "PEP: NM010607G033S NM010607G033S" has been successfully uninstalle
12: Application "PEP: NM010607G028S NM010607G028S" has been successfully uninstalle
13: Application "PEP: NM010607G019S NM010607G019S" has been successfully uninstalle
OK

14 Click OK to continue.

Result: You are prompted to confirm the platform settings for your system. If the settings are correct, click Yes. Otherwise, click No.

15 The upgrade process runs automatically. A series of messages appear, to indicate the items that are being updated (for example, backup/restore, MMFS).

16 After the upgrade is complete, setup prompts you to install PEPs.

17 Click Yes to continue. Remove the Server CD and insert the PEP CD.

Refer to "Installing PEPs" on page 302 for more information on installing PEPs.

18 After all the PEPs are installed, restart the server.

19 After the server restart, run the Configuration Wizard by clicking Start > Programs > CallPilot > Configuration Wizard.

To run the Configuration Wizard

20 Leave all current values in the Configuration Wizard dialog boxes as they are until you reach the Keycode and Serial Number dialog box shown here.

CallPilot Server Configuration Wizard
Keycode and Serial Number:
Please enter the serial number and keycode that came with your CallPilot Server.
Serial Number from dongle
1111
Serial Number
Keycode
Browse
Warning:
If the serial number that came with your keycode does not match the serial number read from the dongle the CallPilot administration client will not be able to connect to the server, contact your distributor for a new keycode and serial number, or dongle.
< Back
Next >
Cancel
Help

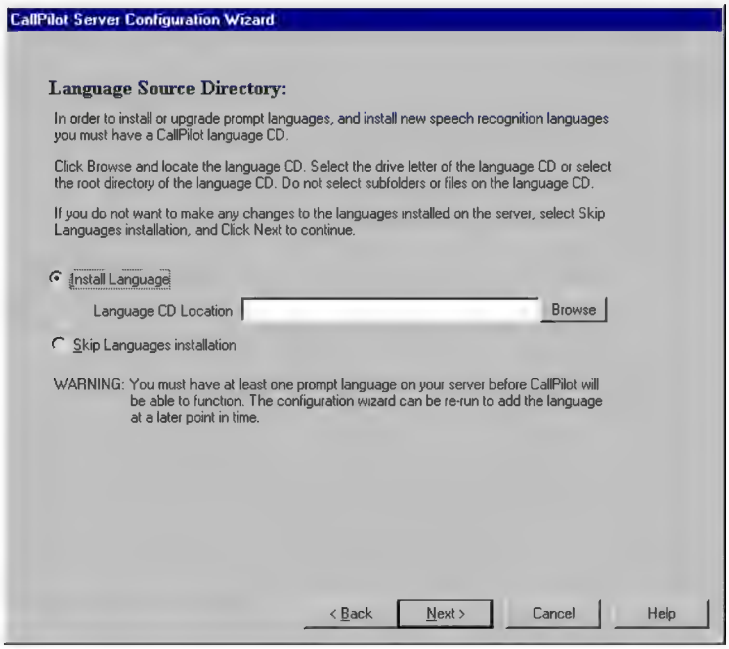
21 Enter the serial number you received with the CallPilot keycode in the Serial Number box. This number should match the prefilled Serial Number from dongle box.

If the serial number contains letters, use lowercase.

Note: The Serial Number from dongle box is prefilled with data read from the software feature key.

22 The keycode is prefilled with the value entered in step 12. Verify that the keycode is correct.

23 Click Next through the remaining Configuration Wizard dialog boxes until the following dialog box.


CallPilot Server Configuration Wizard
Language Source Directory:
In order to install or upgrade prompt languages, and install new speech recognition languages you must have a CallPilot language CD.
Click Browse and locate the language CD. Select the drive letter of the language CD or select the root directory of the language CD. Do not select subfolders or files on the language CD.
If you do not want to make any changes to the languages installed on the server, select Skip Languages installation, and Click Next to continue.
Install Language
Language CD Location
Browse
Skip Languages installation
WARNING: You must have at least one prompt language on your server before CallPilot will be able to function. The configuration wizard can be re-run to add the language at a later point in time.
< Back
Next >
Cancel
Help

24 Remove the PEP CD and insert the CallPilot 1.07 Language CD.

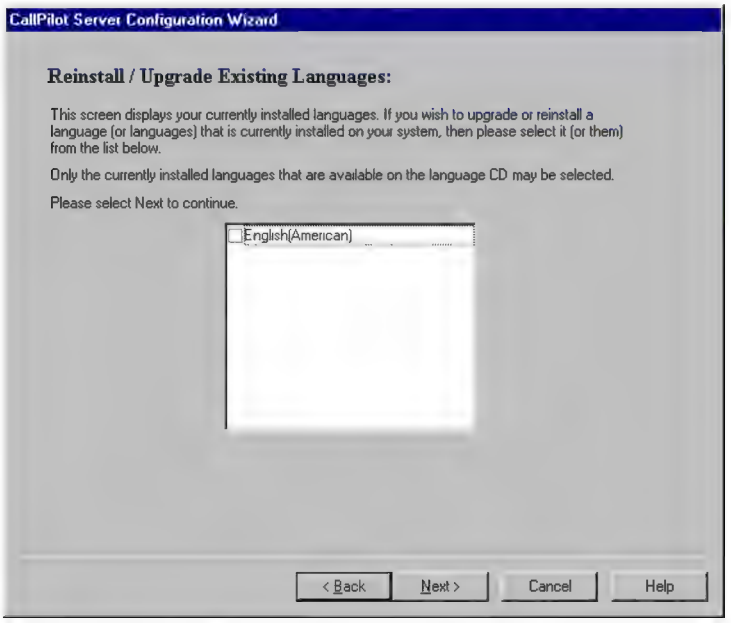
25 Select Install Language.

26 Click Browse and select the CD-ROM drive.

Note: Select the root level of the CD-ROM. Do not select subfolders or files on the CD. For example, if the CD-ROM is drive Z:, select Z:.

27 Click Next.

Result: The following dialog box appears, which lists all currently installed languages:


CallPilot Server Configuration Wizard
Reinstall / Upgrade Existing Languages:
This screen displays your currently installed languages. If you wish to upgrade or reinstall a language (or languages) that is currently installed on your system, then please select it (or them) from the list below.
Only the currently installed languages that are available on the language CD may be selected.
Please select Next to continue.
English(American)
< Back
Next >
Cancel
Help

28 Select the language you want to upgrade and click Next.

Result: The Add Prompt Language dialog box appears.

29 To add a language, select the prompt language check box. Click Next.

Result: The Primary and Secondary Languages dialog box appears.

30 Click Next to accept the currently assigned primary and secondary languages.

Result: The Speech Recognition Languages dialog box appears.

31 Click Next to skip this dialog box.

Result: The language installation dialog boxes are completed.

32 Click Next through the remaining Configuration Wizard dialog boxes until the Ready to Configure dialog box appears.

33 Select Apply the current configuration, and click Next.

Result: The configuration changes are applied to the server. This is followed by a prompt to restart to CallPilot.

Note: The configuration changes take approximately 10 minutes, plus an additional 10 minutes for each language you are upgrading.

34 Click Finish, and then click Cancel to bypass the restart.

To enable the DSP channels

35 From the Administrative PC, click Start > Programs > CallPilot Administration Client.

Result: An Explorer window appears.

36 Click your server icon.

Result: The SMI Login screen appears.

37 Enter your user ID and password, and then click OK.

38 From the Administration Menu, double-click Multimedia Monitor.

Result: The DSP channels appear.

39 If the DSP channels are not enabled, skip to step 40. Otherwise, skip to step 42 to check the DS30 channels.

40 Highlight the channel by clicking the DSP channel entry.

41 From the File menu, select Start Channels.

Result: The highlighted DSP channel changes to online status and becomes enabled.

42 Double-click the Channel Monitor option.

Result: The DS30 channels appear.

43 If the DS30 channels are not enabled, then skip to step 44. Otherwise, skip to step 46 to test the system.

44 Highlight the channel by clicking the DS30 channel entry.

45 From the File menu, select Start Channels.

Result: The highlighted DS30 channel changes to online status and becomes enabled.

46 After disabling all DSP channels, dial in to CallPilot to test that the lines are enabled. You should receive a prompt.

What's next

Test that CallPilot can receive calls by following the procedures in Part 3, Chapter 11, "Verifying that CallPilot can receive calls".

Chapter 10

Expanding CallPilot features

In this chapter

Expanding features 360

Expanding features

Introduction

This chapter summarizes how you add features to CallPilot.

CallPilot supports feature reduction only for those channels that have been previously allocated.

Expansions

The following types of features can be expanded:

- channels
- languages
- number of networking sites
- number of MPUs
- availability of features such as AppBuilderFax and Networking

To add features

1. If you are increasing system capacity, install any additional hardware that was shipped to you (for example, additional cards or boards). Refer to the hardware maintenance section of this Installation binder for installation instructions.
2. Install the software feature key adapter if a new one was shipped to you. Refer to Part 2 of this Installation binder for instructions.
3. Have your new keycode and serial number available. When you purchase additional features or system capacity, you receive a new keycode and serial number.
4. Run the Configuration Wizard (refer to Part 3, Chapter 6, "Configuring the server software—common dialog boxes for all switch types"). In the Configuration Wizard, ensure you do the following steps:
   a. Enter the new keycode and serial number.

b. Allocate new channels (if you have added channels).

ATTENTION

New channels are not automatically allocated. They must be manually allocated using the Configuration Wizard.

5 Configure additional channels on the switch and in the Configuration Wizard.

Chapter 11

Uninstalling CallPilot server software

In this chapter

Uninstall procedures 364

Uninstall procedures

Introduction

This section provides instructions to help you uninstall the CallPilot server software.

Uninstallation of CallPilot removes the software completely from the server. It also removes all CallPilot registry entries, linguistic information, and all links to CallPilot from the server database.

ATTENTION

Once you start the uninstallation process, you cannot restore CallPilot if you decide to cancel the process. You must perform a new installation to load CallPilot onto the server.

What is removed during uninstallation of CallPilot

Uninstallation of CallPilot software removes the following items:

- CallPilot entries in the Windows NT Registry
- all CallPilot entries in the server database
- CallPilot files

Before you begin

Obtain the current password for the Administrator account.

Switch-related procedures

Note that the uninstall procedure varies depending upon the switch connectivity installed at the customer site.

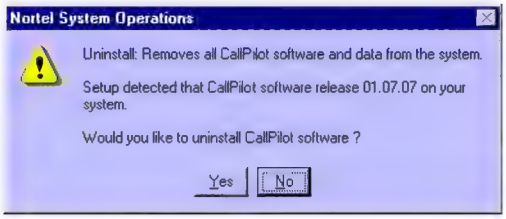
To uninstall Meridian 1

See "To uninstall CallPilot server software" on page 367 for instructions on how to uninstall Meridian 1 software.

To uninstall Lucent, Mitel, Rolm

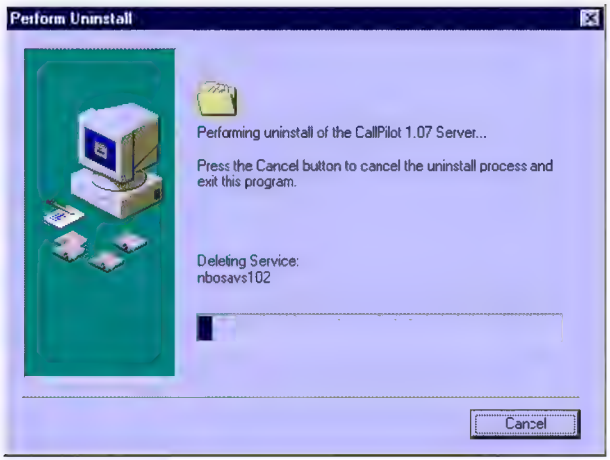
1 Uninstall CallPilot by clicking Start > Programs > CallPilot > Uninstall.

Result: You are prompted to confirm the uninstallation.

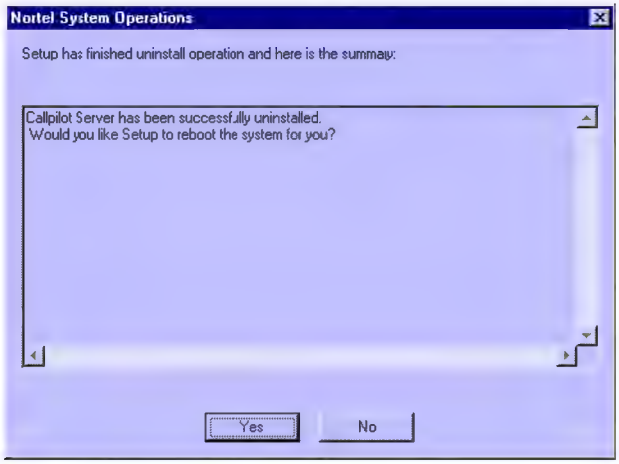

Nortel System Operations
Uninstall: Removes all CallPilot software and data from the system.
Setup detected that CallPilot software release 01.07.07 on your system.
Would you like to uninstall CallPilot software ?
Yes
No

2 Click Yes to uninstall CallPilot.

Result: The uninstall process runs automatically. During this process, the following window appears:


Perform Uninstall
Performing uninstall of the CallPilot 1.07 Server...
Press the Cancel button to cancel the uninstall process and exit this program.
Deleting Service:
nbosavs102
Cancel

3 After the CallPilot uninstall is complete, the following window appears:


Nortel System Operations
Setup has finished uninstall operation and here is the summary:
Callpilot Server has been successfully uninstalled.
Would you like Setup to reboot the system for you?
Yes
No

4 Click No to bypass the server restart.

5 Shut down services by clicking Start > Settings > Control Panel. Double-click Services, and stop the following services in the given order:

- Notification Service
- CallPilot SLEE Service
- EMCI
- Remote Access Server
- Telephony Service
- vbpcload

6 To uninstall the VTG software, click Start > Programs > VoiceBridge 2000 > Uninstall.

7 Click Yes to confirm uninstall.

8 Click No to All to keep shared files.

9 When the uninstall is complete, shut down Windows NT and restart the server.

To uninstall DMS-100/MSL-100

1 Uninstall CallPilot from the server by following the procedure described in "To uninstall CallPilot server software" below. When prompted to restart the server, select No.

2 After CallPilot is uninstalled, remove the Dialogic software by clicking Start > Programs > Dialogic > Uninstall.

3 Click Yes to confirm uninstall.

4 Restart the server.

To uninstall CallPilot server software

1 To uninstall CallPilot, click Start > Programs > CallPilot > Uninstall.

Result: You are prompted to confirm the uninstallation.

2 Click Yes to uninstall CallPilot.

Result: The uninstall process runs automatically.

3 After the CallPilot uninstall is complete, you are prompted to restart the server.

4 Click Yes to restart the server.

Result: You are asked to confirm the restart.

5 Click OK to restart.

Chapter 12

Reinstalling CallPilot server software

In this chapter

Reinstalling the software (hard drive is functioning) 370

Reinstalling languages 376

Reinstalling the software (hard drive is functioning)

Introduction

If the hard drive is functioning but the CallPilot software appears to be corrupted, you can reinstall the CallPilot server software. This might correct the problem. If it does not correct the problem, then you need to rebuild the hard drive (see "Recovering from a hard drive failure or corrupted software" on page 377).

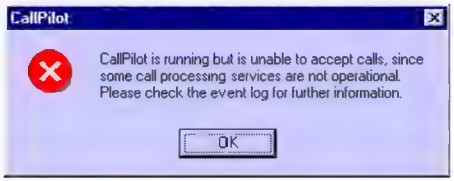
The reinstallation procedure copies CallPilot program files from the CallPilot Server CD-ROM to a CallPilot system running the same version of CallPilot software. This process does not affect system or user data. It recovers most CallPilot program files, but does not recover the operating system, service pack, or, in the case of non-Meridian 1 systems, switch drivers.

Requirements

- CallPilot Server CD-ROM that has the same version of CallPilot that is running on the CallPilot server
- CallPilot Language CD
- CallPilot PEP CD

To reinstall the CallPilot server software

Note: During the reinstall, the following message might appear. If this message appears, click OK and continue with the reinstall.


CallPilot
CallPilot is running but is unable to accept calls, since some call processing services are not operational. Please check the event log for further information.
OK

1 Log on to the CallPilot server.

2 Insert the CallPilot Server CD-ROM.

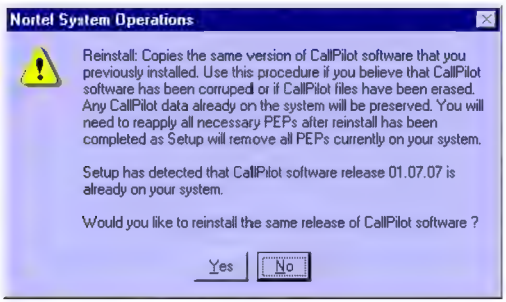
3 Run setup.exe from the root directory of the CallPilot Server CD-ROM.

Result: The following window appears:

Nortel System Operations
NORTEL NETWORKS
CallPilot™
Welcome to Nortel Networks CallPilot Setup. This program allows you to install, upgrade, reinstall or uninstall Nortel networks CallPilot software on your computer.
Please refer to the General Release Bulletin before continuing this operation
It is strongly recommended that you exit all Windows programs before running this Setup program.
Select Exit to quit Setup, and then exit any programs you have running. Select Next to continue with Setup program.
WARNING
This program is protected by copyright law and international treaties
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
Next >
Exit

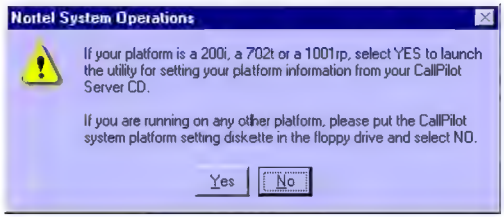
4 Click Next.

Result: Setup examines the system and the displays the following window:


Nortel System Operations
Reinstall: Copies the same version of CallPilot software that you previously installed. Use this procedure if you believe that CallPilot software has been corruped or if CallPilot files have been erased. Any CallPilot data already on the system will be preserved. You will need to reapply all necessary PEPs after reinstall has been completed as Setup will remove all PEPs currently on your system.
Setup has detected that CallPilot software release 01.07.07 is already on your system.
Would you like to reinstall the same release of CallPilot software ?
Yes
No

5 Click Yes to reinstall the software.

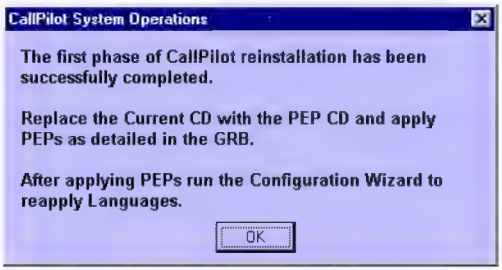
Result: You are asked to confirm the platform setting for the server.


Nortel System Operations
If your platform is a 200i, a 702t or a 1001rp, select YES to launch the utility for setting your platform information from your CallPilot Server CD.
If you are running on any other platform, please put the CallPilot system platform setting diskette in the floppy drive and select NO.
Yes
No

6 Click Yes to begin the reinstallation of CallPilot software.

Result: Files are copied to the server as part of the reinstall procedure. This can take up to ten minutes. A series of messages appears to indicate the items that are being reinstalled (for example, backup/restore, MMFS).

After the reinstall is complete, you are prompted to reinstall PEPs (if any were present on CallPilot).


CallPilot System Operations
The first phase of CallPilot reinstallation has been successfully completed.
Replace the Current CD with the PEP CD and apply PEPs as detailed in the GRB.
After applying PEPs run the Configuration Wizard to reapply Languages.
OK

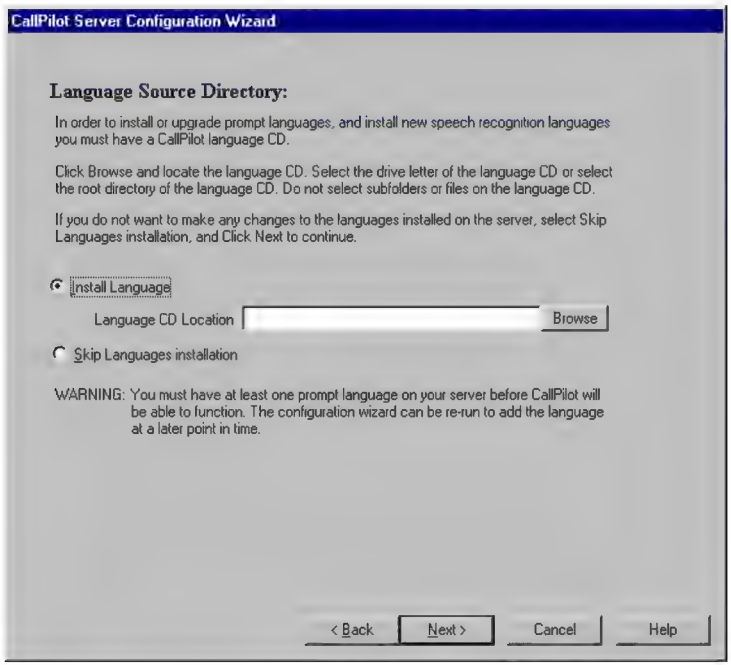
7 Remove the Server CD and insert the CallPilot 1.07 PEP CD. Click OK.

Refer to "Installing PEPs" on page 302 for more information on reinstalling PEPs.

8 After all PEPs are reinstalled, restart the server when prompted.

9 After CallPilot has restarted, run the Configuration Wizard (see Part 3, Chapter 6, "Configuring the server software—common dialog boxes for all switch types").

10 Leave all current values in the Configuration Wizard dialog boxes as they are until you reach the Language Source Directory dialog box shown here:


CallPilot Server Configuration Wizard
Language Source Directory:
In order to install or upgrade prompt languages, and install new speech recognition languages you must have a CallPilot language CD.
Click Browse and locate the language CD. Select the drive letter of the language CD or select the root directory of the language CD. Do not select subfolders or files on the language CD.
If you do not want to make any changes to the languages installed on the server, select Skip Languages installation, and Click Next to continue.
Install Language
Language CD Location
Browse
Skip Languages installation
WARNING: You must have at least one prompt language on your server before CallPilot will be able to function. The configuration wizard can be re-run to add the language at a later point in time.
< Back
Next >
Cancel
Help

11 Insert the CallPilot Language CD.

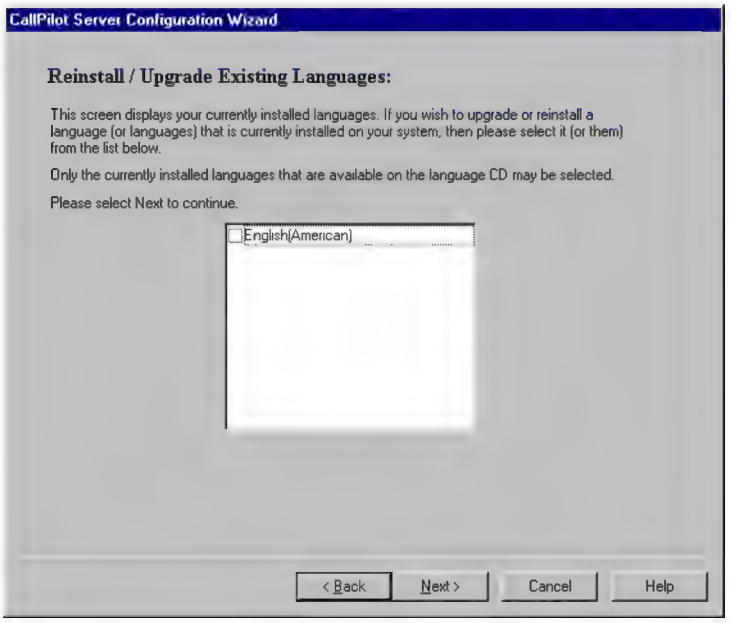
12 Select Install Language.

13 Click Browse and select the CD-ROM drive.

Note: Select the root level of the CD-ROM. Do not select subfolders or files on the CD. For example, if the CD-ROM is drive Z:, select Z:.

14 Click Next.

Result: The following dialog box appears which lists all currently installed languages:


CallPilot Server Configuration Wizard
Reinstall / Upgrade Existing Languages:
This screen displays your currently installed languages. If you wish to upgrade or reinstall a language (or languages) that is currently installed on your system, then please select it (or them) from the list below.
Only the currently installed languages that are available on the language CD may be selected.
Please select Next to continue.
English(American)
< Back
Next >
Cancel
Help

15 Select all the languages listed and click Next.

Result: The Add Prompt Language dialog box appears.

16 Click Next to skip this dialog box.

Result: The Primary and Secondary Languages dialog box appears.

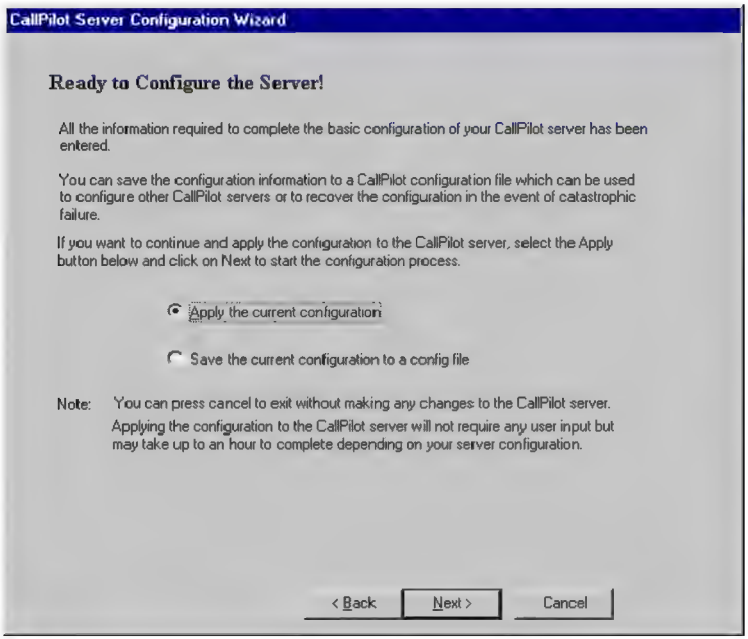
17 Click Next to accept the currently assigned primary and secondary languages.

Result: The Speech Recognition Languages dialog box appears.

18 Click Next to skip this dialog box.

Result: The language installation dialog boxes are completed.

19 Click Next through the remaining Configuration Wizard dialog boxes until the following dialog box:


CallPilot Server Configuration Wizard
Ready to Configure the Server!
All the information required to complete the basic configuration of your CallPilot server has been entered.
You can save the configuration information to a CallPilot configuration file which can be used to configure other CallPilot servers or to recover the configuration in the event of catastrophic failure.
If you want to continue and apply the configuration to the CallPilot server, select the Apply button below and click on Next to start the configuration process.
Apply the current configuration
Save the current configuration to a config file
Note: You can press cancel to exit without making any changes to the CallPilot server.
Applying the configuration to the CallPilot server will not require any user input but may take up to an hour to complete depending on your server configuration.
< Back
Next >
Cancel

20 Select Apply the current configuration, and click Next.

Result: The configuration changes are applied to the server. This is followed by a prompt to restart to CallPilot.

Note: The configuration changes take approximately 10 minutes, plus an additional 10 minutes for each language you are reinstalling.

21 Click Finish, then click OK to restart CallPilot.

Result: The CallPilot software reinstallation is done.

22 Test your CallPilot channels as described in Part 4 of this Installation binder.

Reinstalling languages

Introduction

If the language prompts are not functioning, then you can reinstall them to try and fix the problem.

Requirements

- a CallPilot Language CD

To reinstall languages

1. Log on to the CallPilot server.
2. Run the Configuration Wizard as described in Part 3, Chapter 6, "Configuring the server software—common dialog boxes for all switch types."

Chapter 13

Recovering from a hard drive failure or corrupted software

In this chapter

Overview 378

Recovering from a hard drive failure in a RAID system 380

Recovering from a hard drive failure in a non-RAID system 381

Overview

Introduction

If the CallPilot server hard drive crashes or if software becomes corrupt, then you must either reinstall the software or rebuild the hard drive.

ATTENTION Contact your distributor if a hard drive recovery is required.

Reinstalling languages

If only the language prompts are not functioning, then you can reinstall languages to try to fix the problem. See "Reinstalling languages" on page 376.

Recovering from corrupted software (hard drive is functioning)

If the hard drive is functioning but the CallPilot software appears to be corrupted, you can reinstall the CallPilot server software. This might correct the problem. See "Reinstalling the software (hard drive is functioning)" on page 370. If it does not correct the problem, then you need to rebuild the hard drive.

Recovering from a hard drive failure in a RAID system

For the 702t server, RAID is an option, so the server might have RAID.

In a RAID system the hard drives are mirrored. When one hard drive fails, its secondary hard drive takes over and there is no system down time. However, you need to replace the faulty hard drive as soon as possible to maintain hard drive redundancy. See "Recovering from a hard drive failure in a RAID system" on page 380.

Note: If both the hard drives in a mirrored pair fail, then you need to restore the primary hard drive as described in "Recovering from a hard drive failure in a non-RAID system" on page 381.

Recovering a CallPilot system from a hard drive failure in a non-RAID system or if the mirrored pair fails

If this is a CallPilot system that is already in operation and backup tapes are available, then contact your distributor to perform the recovery procedure. Distributors should refer to the latest General Release Bulletin on the Nortel Networks web site at http://www.nortelnetworks.com/nic for the latest procedure.

If this is a new CallPilot system and no backup tapes are available (for example, the system failure occurs during CallPilot installation), then see Part 1, Chapter 3, "Installing server software for recovery purposes." This procedure erases all existing data on the server.

Recovering from a hard drive failure in a RAID system

Introduction

For the 702t server, RAID is an option, so the server might have RAID.

In a RAID system the hard drives are mirrored. When one hard drive fails, its secondary hard drive takes over and there is no system down time. However, you need to replace the faulty hard drive as soon as possible to maintain hard drive redundancy.

Note: If both the hard drives in a mirrored pair fail, then you need to restore the primary hard drive as described in "Recovering from a hard drive failure in a non-RAID system" on page 381.

To recover from a hard drive failure in a RAID system

Follow the instructions in the hardware maintenance chapter to replace the faulty hard drive and rebuild the new hard drive.

Recovering from a hard drive failure in a non-RAID system

Introduction

Contact your distributor if a hard drive fails. Your distributor has access to a utility that is required to restore data from a backup tape. If this is a RAID system and both drives in a mirrored pair fail, then you need to restore from backup tape. If only one drive in a mirrored pair fails, see "Recovering from a hard drive failure in a RAID system" on page 380.

ATTENTION

The recovery procedure requires access to a utility that is not available to customers. Distributors should refer to the latest General Release Bulletin on the Nortel Networks web site at http://www.nortelnetworks.com/nic for the latest procedure.

Requirements

- all software media that came with the CallPilot system
- a complete set of server backups, including
  - a system backup
  - one secondary disk backup for each additional disk drive on your server (for example E:, F:)

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CallPilot

Installation and Configuration
Part 5: 702t Server Maintenance and Diagnostics

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